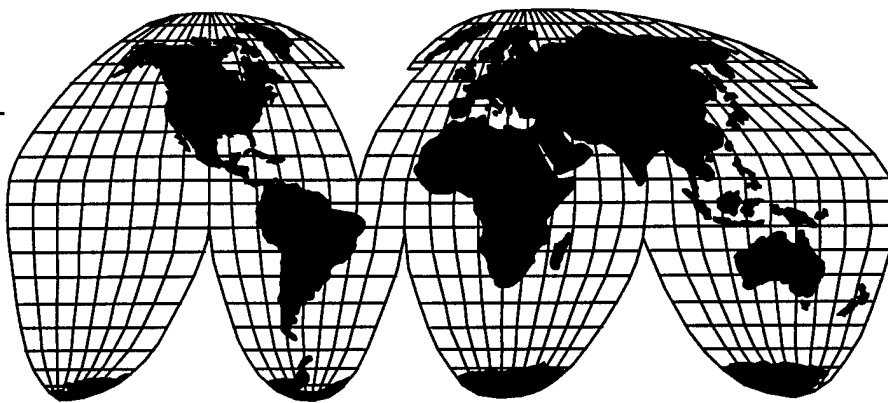


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Final Report

USAF Institute for National Security Studies 1996 Research Conference

**U.S. Air Force Academy, Colorado
7-8 November 1996**

**Sponsored By
USAF Institute for National Security Studies
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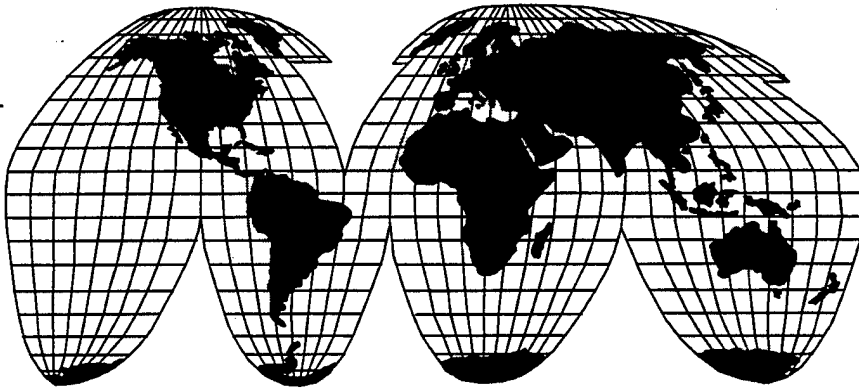
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1996 Research Conference

USAF Institute for National Security Studies

"1996 Research Conference"

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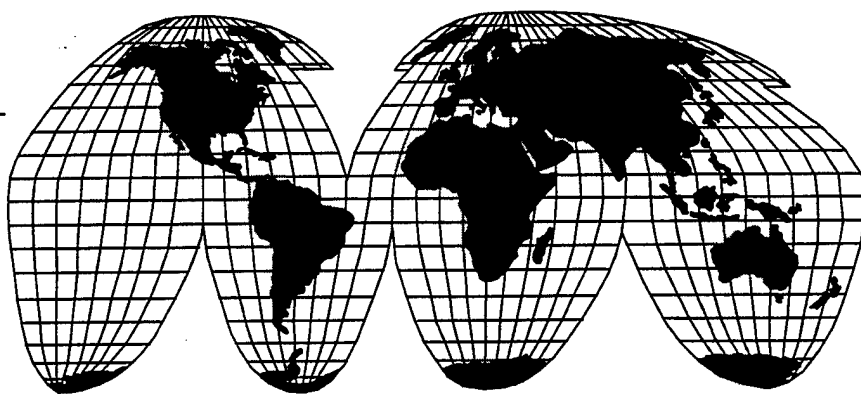
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Executive Summary

1996 Research Conference

EXECUTIVE SUMMARY

Background

The U.S. Air Force Institute for National Security Studies (INSS) in cooperation with HQ USAF, AF/XONP¹ sponsored its fourth annual Research Results Conference on 7-8 November 1996. The Conference was held at the U.S. Air Force Academy, Colorado Springs, Colorado. The purpose of the Conference was to present the findings of research conducted under the sponsorship of INSS. Participants included specialists in international relations, economics, and military affairs from U.S. Government agencies, Services, and academia.

Opening remarks were offered by Lt Col Hays, Director of INSS, Col Wagie, Vice Dean of Faculty of the U.S. Air Force Academy, and Col Bodenhamer, Chief of AF/XONP. Following opening remarks and brief administrative comments, Conference proceedings focused on the presentation of research in the following eight issue areas:

- Arms Control and Proliferation;
- Conflict in the Information Age I;
- Conflict in the Information Age II;
- Air Force Planning Issues;
- Environmental Security;
- Regional Security (Europe);
- Regional Security (Asia); and
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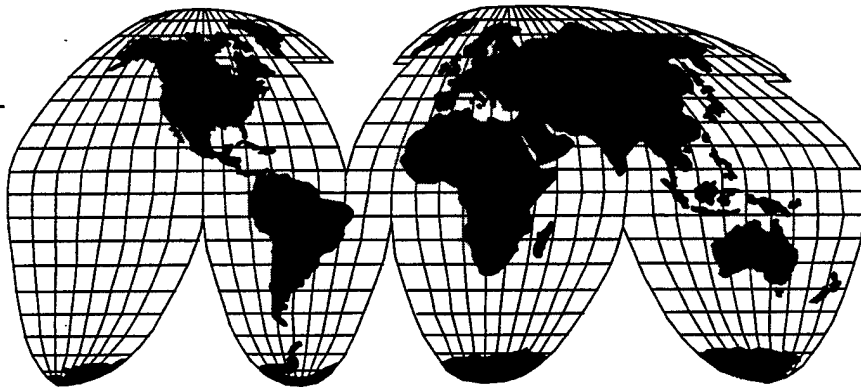
Panels consisted of three to six researchers and a chair was selected for each of the issue areas. Following presentations by all panelists, participants engaged in wide-ranging discussions and debate. The proceedings are captured in this report and the works presented reflect the opinions of the researchers and are not to be taken as official government or institutional positions.

Lt Gen Ervin J. Rokke, President, National Defense University, gave the keynote speech at a banquet for all participants on 7 November 1996.

At the conclusion of the Conference, the editors of the *Airpower Journal* met with researchers to discuss the potential publication of completed research efforts.

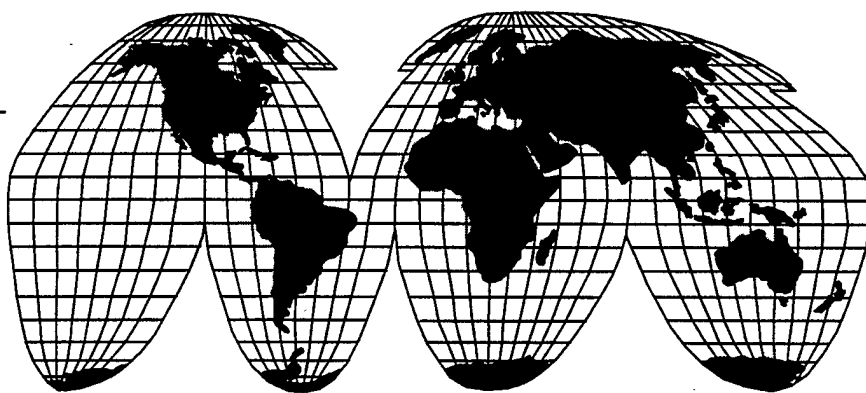
¹ As of January 1, 1997, HQ USAF, National Security Negotiations Division (AF/XOXI) became HQ USAF, Nuclear & Counterproliferation Directorate, Policy Division (AF/XONP).

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Conference Proceedings

1996 Research Conference



Panel 1.

Arms Control and Proliferation

Lieutenant Colonel Alex Ivanchishin, Chair

Lieutenant Colonel Kurt Klingenger

Colonel Guy Roberts

Lieutenant Colonel Jeffrey Larsen

Captain Richard Dabrowski

1996 Research Conference

PANEL 1: ARMS CONTROL AND PROLIFERATION

Chair: Lt Col Alex Ivanchishin, Treaty and Agreements Branch, XOXI

Participants: Lt Col Jeffrey Larsen, Senior Research Fellow, INSS

Col Guy Roberts, Staff Judge Advocate, 2nd Marine Division

Lt Col Kurt Klingenger, Kunsan AB, Korea

Capt Richard Dabrowski, Special Operations School, Hurlburt Field

PANEL PRESENTATIONS:

"Russian-American Cooperation in Weapons of Mass Destruction (WMD) Counterproliferation," Capt Richard Dabrowski

Capt Dabrowski examined the desirability of cooperation between the United States and Russia to conduct joint strategic special operations, particularly in counterproliferation contingencies. Both nations currently cooperate in several counterproliferation-related areas, including the "loose nuke" scenario, an international law-enforcement training program aimed at nuclear smuggling and terrorism, and in theater missile defense exercises. Capt Dabrowski stated that since the proliferation of WMD is a long-term threat to both Russia and the United States, as well as the international community, cooperation between both nations using special operations forces (SOF) against WMD proliferation may be useful and desirable.

Current U.S. policy emphasizes preventive diplomacy to combat the spread of WMD. This policy is based on activities such as multinational cooperation in export controls, border controls, and police actions. Preemptive strikes, though not a part of the current U.S. policy, may become necessary in extraordinary circumstances that overwhelm the capabilities of these civilian agencies. According to Capt Dabrowski, the United States would benefit greatly from Russian cooperation in WMD counterproliferation contingencies. The benefits of cooperation would include a pooling of resources and sharing of political responsibility.

Russia would also benefit from cooperation in WMD counterproliferation contingencies. As the primary inheritor of the former Soviet Union's WMD arsenal, Russia's nuclear forces offer one of the few ways it has left to claim superpower status and prestige. In addition, the disorganization and economic difficulties facing Russia and other former Soviet States make this region the most likely source of leakage of weapons of mass destruction. Cooperation in WMD activities would clearly benefit Russia's status, prestige, and security in the world.

Capt Dabrowski offered that three types of cooperative special operations forces (SOF) missions would be feasible in a WMD scenario: detection, interdiction, and sabotage. Russian knowledge and expertise would significantly contribute to the success of these missions. Three sets of criteria, including military, short-term political, and long-

term political, were proposed to determine how Russian cooperation in a WMD counterproliferation contingency might create a greater likelihood of success for the operation.

The operational reliability of all facets of the Russian military is questionable, as demonstrated in Chechnya. Capt Dabrowski concluded it may not be prudent to include the Russian military in a preemptive counterproliferation strike until the operational reliability of its military is improved. As regards short-term political cooperation, the usefulness of a foreign military presence remains unclear. On the one hand, cooperation creates a permissive environment for SOF operations. However, such a presence may be unacceptable to the public of the host nation. Cooperation limited to information-sharing through classified communication links could more easily be kept confidential than the presence of advisors from another country. Long-term political cooperation in WMD counterproliferation missions is perhaps the most feasible, as WMD counterproliferation may require protracted campaigns involving vigilance of indefinite duration against rogue states and WMD-armed terrorists.

Russian-American cooperation in WMD counterproliferation contingencies have several precedents, including joint peacekeeping, the Cooperative Threat Reduction program, and the DOE Lab-to-Lab Initiative. Although cooperation on WMD counterproliferation does not currently exist, several Russian and American models for SOF cooperation exist. American models include Nuclear Emergency Search Teams and U.S. Special Operations Command Special Mission Units. The Russian models derive from the Soviet Spetsnaz forces. Regardless of what model is used, Capt Dabrowski concluded that the United States should consider soliciting the assistance of Russia in dealing with WMD counterproliferation contingencies.

"The Development of an Agreed NATO Policy on Nonproliferation," Lt Col Jeffrey Larsen

Lt Col Larsen's research focused on the development of an agreed NATO policy to address the increasing capabilities of potential proliferant states armed with WMD. These potential proliferant states, classified as rogue states, non-state actors, or terrorist groups, pose a more diffuse and less well-defined threat to NATO's population, territory, deployed forces, and freedom of action in out-of-area operations than the traditional Soviet threat during the Cold War.

Several recent events have made the proliferation of WMD a NATO concern. The 1991 Gulf War demonstrated that NATO is not prepared to fight in a WMD environment. In addition, post-war inspections in Iraq revealed an underestimation of Iraq's WMD arsenal. Other events, including the 1994 discovery of fissile materials smuggling in Germany and the 1992-1994 North Korean nuclear crisis have also heightened NATO's awareness of the growing problem of proliferation of WMD's. These events have demonstrated that traditional non-proliferation efforts, such as export controls and

coordination of efforts to control sensitive technologies, have failed and that both military and political measures are needed to counter these threats.

NATO's WMD proliferation concerns cover a spectrum of scenarios and regions. Specifically, its regional concerns include North African states, Middle Eastern states, and a revanchist Russia. In general terms, NATO's overarching concerns include facing an adversary armed with WMD, a regional conflict involving WMD, and perhaps more importantly, a conflict involving WMD not directly involving NATO, but perhaps indirectly exposing deployed NATO troops performing military operations other than war (MOOTW).

In January 1994, NATO addressed the growing threat to international security posed by the proliferation of WMD and their delivery systems. It emphasized that its response to this threat must include both political and military measures. Three committees were created, including the Joint Committee on Proliferation, the Senior Political-Military Group on Proliferation (SGP), and the Senior Defense Group on Proliferation (DGP). The DGP conducted a three-phase study: the first phase involved assessing the threats and risks facing NATO, whereas the second and third phases focused on determining the implications for a defensive NATO posture and assessing existing capabilities, shortfalls, and suggested remedies, respectively.

Phase 1 was completed in May 1995 and was the first such risk assessment ever conducted by NATO. Phase 2 was completed in November 1995 and the results suggested that the most likely scenario involves WMD threats versus NATO deployed troops. Recommendations to deal with this scenario included active and passive defenses, intelligence, counterforce capabilities, and battle management. The third phase was completed in June 1996 and resulted in 39 recommendations. The primary recommendations included the development of base capabilities for multiple taskings, a call for enhanced multinational training and exercises, and an accelerated force planning process to address capability shortfalls.

In addition to supporting NATO activities, the United States has also made significant progress in combating proliferation of WMD. It established the Defense Counterproliferation Initiative in 1993, emphasizing key areas such as nonproliferation, offensive countermeasures (counterforce), active defense, and passive defense. The United State's list of 14 shortfall priorities include the detection, identification, and characterization of biological and chemical agents, as well as cruise missile and theater ballistic missile defenses, among others.

The United States and NATO lists of shortfalls, priorities, and recommendations are quite similar. This is not surprising given that most of the items listed are common sense responses to this new threat, and given traditional American leadership in new military programs and strategies for NATO. Both NATO and the United States stress Theater Missile Defenses, and include prevention and protection elements in their

counterproliferation efforts. The United States is already immersed in research and development efforts in each of the 14 shortfall areas.

Although the U.S. counterproliferation effort is alive and well, the United States would rather pursue it with NATO's assistance, both in a financial and intelligence sharing capacity. However, it is unclear how NATO will pay for any of these programs. All states have said that they are unable to support additional spending for new projects. Deciding who will pay and how much for specific programs will be extremely difficult. As a result, the DGP has concluded that despite prior NATO announcements, it is unrealistic to expect that sufficient resources exist to defend and protect NATO populations or territory from WMD attack.

Lt Col Larsen suggested that four general approaches are available which the Alliance might take in developing an agreed policy on nonproliferation: defusing proliferation incentives via traditional nonproliferation efforts, plus political measures; enforcing international sanctions against proliferators through the United Nations and the OSCE, especially within Europe; offensive military action, including preemptive defense, against proliferators; and developing ballistic missile defenses to counter WMD threats. He concluded, however, that given fiscal constraints, NATO will likely focus on deterring would be attackers and employing passive defensive measures for deployed forces when deterrence fails.

"NATO's Response to the Proliferation of Weapons of Mass Destruction," Col Guy Roberts

Col Roberts' stated that non-proliferation efforts to date have failed, and that they will continue to fail as demonstrated by the continuing proliferation of WMD. Proliferation of WMD poses a serious challenge to the United States and its allies. Although the United States has taken the lead in developing strategies to counter the proliferation of WMD, it cannot act alone in addressing this proliferation challenge. The United States has persuaded its NATO allies to embark on a program to respond to the threat of WMD against NATO territories and forces. It is expected that United States forces will someday contend, either in concert with allied or coalition partners or by itself, with a WMD-equipped adversary. He suggested without properly trained or equipped forces, coalition forces will be unable to accomplish their mission in a WMD environment.

NATO has begun to develop capabilities and strategies similar to those of the United States to counter the proliferation of WMD. It has recognized that deterrence may not work and that a WMD threat does exist. In 1994, NATO established two expert groups: the Senior Political-Military Group on Proliferation (SGP) and the Senior Defense Group on Proliferation (DGP). The SGP developed an agreed policy framework that became NATO policy for identifying and pursuing capabilities needed to deter the threat or use of WMD. The DGP identified the security implications of proliferation, assessed

existing and needed Alliance capabilities, and recommended specific measures to address existing deficiencies.

In June, 1996, the DGP issued a report that outlined a work plan for addressing shortfalls in Alliance capabilities. It stressed the need to develop appropriate Alliance doctrine, training, and planning, and established 39 "action plans" which validated ongoing efforts to develop needed capabilities. Although the work plan was endorsed by Foreign and Defense Ministers in June 1996, many stated that it was overly ambitious, too expensive, and unrealistic. Several national leaders claimed there was no widespread interest in their nations to spend more on defending against proliferation risks. There was too much public ambivalence about the threat of proliferation to justify allocating increasingly scarce budget resources toward the DGP work plan.

Col Roberts provided three recommendations for a more realistic, achievable, and effective counterproliferation program. First, he suggested a NATO controlled, centrally located, and politically supported Proliferation Risk Intelligence and Analysis Center should be created. The goal of the center would be to provide intelligence to support Alliance efforts to prevent acquisition of WMD by rogue states and terrorist groups. In addition, the Center could assist in the adaptation of NATO military forces to respond to a WMD threat. However, establishment of such a center entails advantages and disadvantages. The advantages include Alliance-wide credibility and access to an all-source center for information collection. The disadvantages include uncertain initial start-up costs, the risk that center assessments will clash with national views, and that the United States will have to provide sensitive information.

Second, Alliance partners should agree to share resources and to provide common funding and cost sharing for all counterproliferation programs. Common funding would strengthen commitment of Alliance partners, lower costs, and accelerate standardization and interoperability of new systems. Using The Technical Cooperation Program between the United States, UK, Australia, Canada, and New Zealand as a model, Alliance partners should commit to cooperative research, development, and procurement programs. Further, an oversight body should also be created to direct collaborative efforts across the full range of counterproliferation technology applications.

Third, Col Roberts recommended revamping NATO doctrine and embarking on realistic training for use of selective forces to operate in out-of-area WMD environments. Doctrine publications should be reviewed and revised to include material about warfare in WMD environments. In addition, the United States should lead in initiating combined WMD proliferation exercises and should be prepared to fund training and equipment for designated forces to fight in out-of-area WMD environments.

In conclusion, the DGP/SGP process has had positive results, specifically by increasing awareness to threats of WMD proliferation and by identifying capability shortfalls to counter those threats. However, current budgetary constraints will limit the ability of NATO to meet the ambitious goals of the DGP work plan. In order to

compensate for these limitations, a NATO proliferation threat and analysis center should be established. In addition, cooperative, common funding programs should be created and doctrine and training re-oriented to account for WMD environments.

“Sustaining Alliance Air Operations in a Nuclear, Biological, and Chemical Weapons (NBC) Environment,” Lt Col Kurt Klingenberger

Lt Col Klingenberger's research focused on determining whether the direction of NATO's NBC defense preparedness matches the escalating rhetoric regarding the proliferation of WMD. Senior policy makers throughout the Alliance as well as NATO's permanent staff in Brussels consistently identify the proliferation of weapons of mass destruction as a severe threat to NATO forces in the coming decades. It is likely that NATO member nations, either acting alone or as part of a coalition, could be confronted with an adversary equipped with and willing to employ NBC.

Several NBC delivery means already threaten NATO members. Ballistic missiles are currently within range of many southern allies. In addition, NATO members are concerned about future delivery platforms, including longer range missiles, cruise missiles, and unpiloted airborne vehicles, all capable of increased accuracy. The future will likely bring more countries with access to NBC weapons and their appropriate delivery systems.

The problem with NBC environments is that they complicate several aspects of operations, including logistics, communications/control, and human psychology and physiology. Specifically, NBC conditions severely hamper normal human functions, resulting in degraded performance in all operating areas. Compounding the problem is the constraint that air bases cannot move easily to avoid complications from NBC weapons. In order to reduce the probability that NATO forces will fight in an NBC environment, several non- and counterproliferation options exist, including: diplomacy/collective security, arms control/export control, deterrence, preemption (although not a NATO policy), active defense, counterforce, passive defense, and the ability to survive to operate (ATSO).

ATSO involves passive defense as well as rapid runway repair, firefighting, local active defense, and air base ground defense. It is more dynamic than passive defense because it focuses on post-attack operations. Specifically, ATSO solutions involve providing NBC equipment to base personnel, training personnel individually and as groups, acclimating personnel to NBC environments, and conducting exercises and evaluations to prepare all base staff in NBC operations. Lt Col Klingenberger suggested that passive defense/ATSO preparedness is critical to deterring both the acquisition and use of NBC weapons.

Individual Alliance members are each a considerable distance from adequate preparation for operating in NBC environments. The Alliance as a whole is even further from the minimum preparation. Improvements are necessary for both individual Alliance

members and for NATO as a whole to ensure that they can project a unified and determined face to an adversary and thus better deter adversary NBC use in the first place.

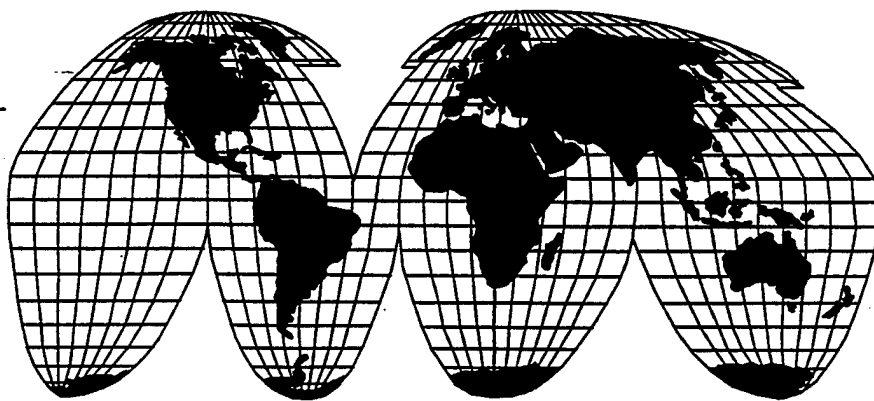
Lt Col Klingenberger suggested two approaches toward improving NATO NBC readiness. First, all agreed Alliance goals, standards, and structures must be examined. Although there are thousands of NATO standardization agreements (STANAGS), many of them devoted just to NBC, there is no consensus on them and they are often subject to "national reservations." In addition, NATO's integrated military structure (IMS) must be examined at all levels, including HQ NATO, Combined Air Operations Centers, and others. Second, national force contributions to NATO must be examined to identify their strengths and weaknesses in NBC operational environments. Unfortunately, several member nations have reduced their NBC training requirements after the Gulf War.

Preparing NATO forces to sustain air operations in an NBC environment will not be easy, especially in light of continuing budget and personnel cutbacks in national forces. However, if a solution is not found quickly, NATO could lose one of its tools for both deterrence and protections at the same time that the political rhetoric is highest about countering proliferation. The real danger is that the Alliance could end up "self-deterred" if it cannot convincingly demonstrate that its air forces are ready to sustain operations in any situation.

Panel Discussion

There was no discussion period due to time limitations.

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Panel 2.

Conflict in the Information Age I

**Major Greg Rattray, Chair
Lieutenant Donald Elam
Major Mike Muzzerall
Captain Roger Thrasher**

1996 Research Conference

PANEL 2: CONFLICT IN THE INFORMATION AGE I

Chair: Maj Greg Rattray, Fletcher School of Law and Diplomacy

Participants: Maj Greg Rattray, Fletcher School of Law and Diplomacy

LT Donald Elam, Department Head School

Maj Mike Muzzerall, Air Command and Staff College

Capt Roger Thrasher, Rome Laboratory

PANEL PRESENTATIONS:

“Assessing Adversaries Information Warfare (IW) Objectives and Capabilities,” Maj Greg Rattray

According to Maj Rattray, IW definitional clarity still does not exist after three years of discussions. Concerns over the impact of information technology on national security and a lack of cross-disciplinary thinking have contributed to the lack of IW definitional clarity. A variety of publications demonstrate little overlap in national and global information infrastructure definitions. The information age and its resulting consequences, such as IW, could have lasting effects on all aspects of society, and as such, a clear understanding of all aspects of IW is mandatory.

Maj Rattray expressed his belief that the vulnerability of U.S. information infrastructure to strategic attack is unclear. There is no empirical evidence suggesting that our information infrastructure can be damaged to the point of becoming a national security concern. Although there have been many examples of information disruption, none have involved a major orchestrated attack on U.S. information infrastructure. In addition, there is no IW “Gulf War” to learn from regarding strategic information warfare. However, Maj Rattray believes that the United States will get IW clarity in the future through learning by example. The future will probably bring a true IW attack in the form of an electronic “Pearl Harbor.” The challenge facing the United States is to develop an understanding of IW and appropriate defense mechanisms to avoid the devastating attacks of a true IW attack.

Maj Rattray recommended two approaches to reach an understanding of IW and its implications for information-based societies. First, IW researchers must look beyond the available IW literature, as limiting themselves to such literature will only place them in a tail chasing situation. In addition, researchers should identify what the United States should do as regards IW and use existing theoretical frameworks such as strategic attack and technological assimilation to analyze IW needs. The proper application of theoretical frameworks to IW needs could assist in the development of IW definitional clarity. Second, Maj Rattray suggested that IW researchers must engage with people who build information programs and those who regulate the commercial information infrastructure to gain insight into their unique and valuable perspectives on information infrastructures.

Pure academics lack an understanding of the practical, real-world aspects of information systems and infrastructures.

As the majority of IW researchers are starting their work from ground zero, Maj Rattray suggested that they draw reasonable boundaries around the problem they themselves have identified and limit their research to those boundaries. Of course, these researchers should expect to be criticized for forgetting some elements related to IW, but unless some research focus is maintained, no consensus on the definition of IW will ever be achieved.

“Attacking the Infrastructure: Exploring Potential Uses of Offensive Information Warfare (IW),” LT Donald Elam

LT Elam began his discussion by stating that the world has entered the Information Age, where information is power. Countries and militaries must change their mentality to survive in this new age, where controlling information more effectively than your opponent will determine victory. IW will likely dominate the future battlespace. Military officers must be educated in complex and dynamic principles underlying IW to succeed in future conflicts.

The challenge to understanding IW lies in its dynamic nature, as today’s principles could be outdated tomorrow. Fundamentally, there exists a need for an agreed upon IW definition; too many definitions currently exist between DoD, academics, and experts. Although a common definition of IW is necessary, constructing that definition is rather complex because IW encompasses many profound concepts, such as Complexity Theory.

LT Elam suggested, the IW playing field is crowded, as almost anyone and everyone is a player. IW participants include multiple departments, groups, and committees of the federal government, as well as industries, academia, public interest groups, and the media. Potential IW complications from such a diverse field exist, including a duplication of effort or omission of information, increased vulnerability of friendly forces, and possible reduced emphasis on the enemy.

The Information Age was brought about largely by advances in technology. As technology has advanced, so has the reliance on information. This increased reliance has cultivated the likelihood of IW, which in turn has brought a need for effective countermeasures. A close examination of almost any real-world mission and its associated modern military systems demonstrates this reliance on technology. As the reliance of military systems on technology increases, the potential shift in use of those technologies towards IW increases as well.

The emergence of IW as a solid warfighting discipline demands that the United States embrace it or suffer the consequences. The United States should understand the power and importance of offensive information warfare (OIW), defined as “any action

taken to degrade or destroy an enemy's information infrastructure and systems." Although OIW could potentially bring a nation to its knees without loss of life, an appropriate strategy must first be crafted before OIW can be pursued.

As with any warfighting discipline, centers of gravity (COGs) must be identified and attacked. Target sets of OIW should be epistemologically oriented, meaning that they should focus on "everything a human organism--an individual or group--holds to be true, no matter that which is held to be true or real was acquired as knowledge or as a belief." He suggested OIW should try to affect an enemy's thoughts and ideals, down to their basic core as a society or as a people, preferably without their knowledge.

If OIW COGs are to be exploited, LT Elam stated that some kind of tool must be developed to facilitate this large and complex process. Any tool that is developed must be generic enough that it can be employed in a wide variety of situations but must still be useful to commanders and decision makers. LT Elam suggested the use of an OIW template that incorporated the interaction of various infrastructure elements, including political, economic, physical, and military. Furthermore, other elements such as culture, history, interests, and goals should also be considered.

The decision to use OIW is difficult. Many complex issues should be considered, including political, legal, moral, and ethical. In addition, other issues including the scope of threats, goals of an OIW attack, and the repercussions of such an attack, both economically and socially, should be considered. LT Elam concluded that IW will likely dominate the future battlespace, and the United States must be prepared to confront the IW age.

"Military Responses to IW Violations of U.S. National Security," Maj Mike Muzzerall

The national security of the United States has been based historically on the concept of national sanctuary provided by the Atlantic and Pacific Oceans. Although that sanctuary has seldom been violated, such as the Japanese attack on Pearl Harbor, the American people have taken drastic action against such violations whenever they have occurred. Maj Muzzerall's research effort focused on determining how information warfare (IW) affects the U.S. notion of national sanctuary and, if that sanctuary is violated, what military responses the United States could, would, or should pursue in response to IW violations.

According to DoDD 3600.1, IW is defined as "those actions taken to achieve information superiority in support of national military strategy by affecting adversary information and information systems while leveraging and defending our information systems." Several distinct elements comprise IW, including: command and control warfare, information based warfare, electronic warfare, psychological warfare, and synthetic theater of war (hacker warfare, information blockade, and cyberwar).

IW is distinctly "boundaryless" and threatens the concept of a U.S. national sanctuary. In cyberspace, traditional geographic borders have disappeared, national regulations do not apply, and time is irrelevant. U.S. defense agencies are currently developing defensive measures against the information warrior that will provide a virtual sanctuary or cybersanctuary. However, there is no perfect sanctuary, and a cybersanctuary will doubtless have its vulnerabilities.

Several legal and social issues confront the United States regarding involvement in IW. Socially, questions of individual and societal rights to privacy abound. Legally, several questions remain unanswered, including the applicability (or lack of) international, federal, or state laws, the distinguishing characteristics between acts of war and acts of aggression, and the role of treaties and agreements to which the United States is a party. Other questions such as when and under what circumstances the United States should engage in active or passive defensive IW, or when it should pursue offensive IW also remain unanswered.

Passive defensive IW, comprised of back-up systems, concealment techniques, and passwords, poses no legal problems. Rather, active defensive IW techniques, such as automatic counter-attacks that damage intruding systems, present legal challenges that must be resolved. However, requiring U.S. government agencies to follow IW laws could pose serious challenges to active defense techniques. An enemy IW attack would probably be over in a matter of minutes, and U.S. agencies will not have the luxury of waiting hours or days for court approval to respond. Decisions to engage in acts whose legality, national or international, is in any way questionable must be made at the highest levels of government. However, a well defined national policy on IW must be defined before any such decisions are made. A national policy is currently under development by DISA, NSA, and the FBI.

Within the current legal framework, would, should, or could the military respond to unauthorized intrusions into this new cybersanctuary? Answering this question is difficult because of several limitations constricting a military response. These limitations include a societal fear of martial law, and compliance with federal statutes and treaties, among others. Maj Muzzerall suggested that the perception of an IW threat would determine when and how the military should respond. Specifically, threat perception depends upon a combination of three factors: the level of U.S. security interest threatened or attacked, the areas or groups targeted, and the nature of the attacker.

According to Maj Muzzerall, the military should intervene if the IW attack is aimed at a core or intermediate security interest. In other words, the military should intervene if the American people and territory, or the American way of life, is threatened. Any other threat, considered "peripheral", only raises the question of whether the military would or could respond. As regards targeted groups, three categories were identified: business, government, and econo-technical infrastructure -- banking, accounting, and communication systems that the trade and banking industries use.

Although attacks against business are normally considered crimes of peripheral interest, some attacks could cross over security interest areas and become a core or intermediate security threat. Maj Muzzerall stated that attacks from insiders or U.S. citizens are normally seen as criminal acts under existing laws. However, if core or intermediate interests are involved, then the military should be made available to support the law enforcement agencies. Lastly, attacks from foreigners are more complex. If an individual is involved, then the attack should be treated under the same guidelines as for an insider attack. However, if the attacker is sponsored by a foreign state, then the military should be directly involved in responding to the attack.

In conclusion, Maj Muzzerall stated that the concept of a U.S. national sanctuary is no longer valid in the age of IW. The United States must prepare itself to engage, both defensively and offensively, in IW. Although numerous legal and social questions remain unanswered, the United States must promulgate National and DoD IW policy. In addition, all information technology systems, both public and private, that are vital to U.S. national security interests should be identified and prioritized according to importance. Finally, the U.S. government should provide a guide for NCA and DoD to determine when the military should, would, or could be used to respond to IW attacks.

“Information Warfare (IW): Implications for Forging the Tools,” Capt Roger Thrasher

Capt Thrasher stated that the process of attacking an enemy's information and information technology vulnerabilities for any political or military purpose, and the protection of one's own information and information technology is the essence of IW. It was suggested that IW is part of the on-going Revolution in Military Affairs (RMA), which consists of changes primarily in information technology advancement.

As part of an RMA, IW consists of four components, including technological change, systems development, operational innovation, and organizational adaptation. Most research to date has focused only on assessing the operational and organizational issues involved with IW. As a result, Capt Thrasher's research has focused on the less understood IW components of technological change and systems development, specifically as they relate to technology research and acquisition activities.

The characteristics of IW are dependent on and enabled by the unique traits of information technology (IT), which is based largely on commercial technologies available to almost anyone with money. Unfortunately, the U.S. military has little impact on the commercial market and must strongly engage in the commercial world to make its offensive and defensive IW needs known. As most of the future technologies and directions for research will be provided by the commercial sector, the military should focus its research efforts on unique areas not likely to be addressed in the commercial world.

Advances in IT may make possible significant changes in the organizational structure of how information systems and services are acquired. The shift from a centralized to a decentralized system where users determine their own IW requirements will likely occur, and such a decentralization may be important to the acquisition world. Therefore, the U.S. military should promote activities that enable decentralization. These activities include continuation of R&D for military purposes, support for development of standards and architectures, development of contract purchase vehicles, and demonstration of new technologies to educate users.

The organizational implications of decentralization may include structural simplification and streamlining. However, the most significant implication of decentralization will include a promotion of ad hoc alliances between individual members of the acquisition world to address specific needs or to collaborate on individual programs using modern information technologies. Realizing the benefits of IT on the military acquisition process will require user-level information technologists who understand both the warfighter and technology.

Changes to the acquisition process should be made continuously and incrementally to keep up with advancing technology. Continual cycles of technology should be inserted via test beds and technology demonstrations to ensure non-traditional procurement and disposal of the underlying system. At the same time, the more stable functions that comprise these systems should be properly managed to ensure reliable service to users. Critical areas of these systems must be identified and protected during design to mitigate IW warfare threats. The United States should be able to take full advantage of an RMA if it realizes its IW potential, and it can only do that by engaging in effective IT research and resultant acquisition development efforts.

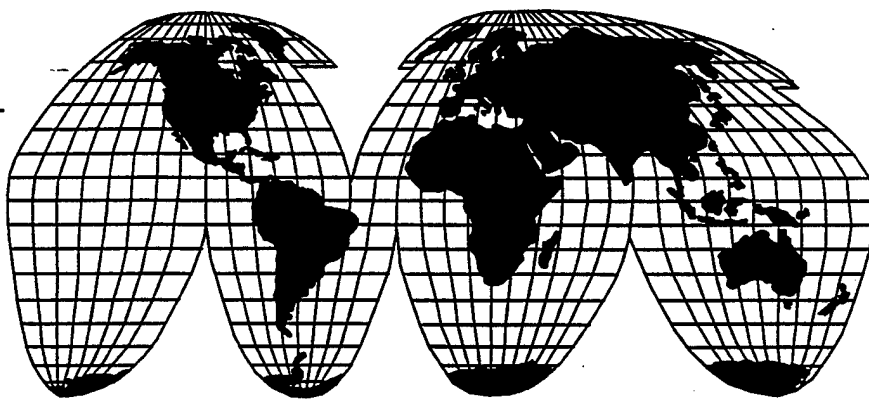
Panel Discussion

Discussion commenced with an observation by a participant indicating the ramifications of OIW are tremendous. The number of elements in information infrastructures and the connectivity links between them will severely complicate IW efforts. The collateral damage, both politically and legally, may even negate any positive IW effects. LT Elam agreed with the participant's comments, and added that IW is truly a complex issue, especially when economic information systems could be affected. He recommended the United States should prepare for the potentially devastating effects of an IW attack, and prepare for the complexities of OIW.

Another participant questioned how vulnerable the United States is to an electronic "Pearl Harbor" attack. In addition, if the United States is, in fact, vulnerable to such an attack, why has an attack not occurred? Maj Rattray offered that the vulnerability of U.S. information infrastructure to a strategic IW attack is unclear. There are too many unknowns, including the complexity and survivability of information systems, to properly assess U.S. vulnerability to such an attack. However, the possibility of IW exists, as well as the potential for devastating results. In this light, it is clear that an understanding of IW

and its elements, as well as a fundamental understanding of the complexities of information infrastructures, are mandatory. Although no one is aware of a strategic IW attack on U.S. information systems, the possibility cannot be discounted and preventive/defensive measures should be developed to counter such an attack in the future. Maj Muzzeral added that other factors, including the ability to identify IW attackers and to respond on time, complicate matters. Furthermore, identifying the intentions of IW attacks is critical, yet difficult, to ensure that appropriate laws can be enforced.

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Panel 3.

Conflict in the Information Age II

Lieutenant Colonel Jim Rodgers, Chair

Major Bob Yahn

Major Greg White

Captain Patrick Barker

1996 Research Conference

PANEL 3: CONFLICT IN THE INFORMATION AGE II

Chair: Lt Col Jim Rodgers, Future Concepts Branch, XOXI

Participants: Maj Bob Yahn, 1st Reconnaissance Squadron, Beale AFB

Maj Greg White, USAFA Department of Computer Science

Capt Patrick Barker, USAFA Department of History

PANEL PRESENTATIONS:

"The Information Web: A Vulnerability Assessment," Maj Bob Yahn

Maj Yahn's research effort focused on identifying key information infrastructures in the United States and assessing their vulnerability to IW attacks on a strategic level. Specifically, the research examined the vulnerability of the Federal Reserve's Fedwire system, the Air Traffic Control system, and the Energy Management system (electrical power industry) to an IW attack through the public switched network (PSN).

Discussion began with a recent example of an information attack. According to Maj Yahn, an engineer from St. Petersburg, Russia, managed to hack his way into Citicorp's cash management system in Manhattan, New York, by using a laptop computer and phone lines. This hacker was able to illegally transfer \$400,000 into his own accounts before being apprehended by authorities. Maj Yahn emphasized that information attacks are very real, and the concept of IW should not be taken lightly.

Assessing the vulnerabilities of information systems requires the identification of the centers of gravity and/or the critical nodes of these systems. Maj Yahn identified critical nodes as the command and control centers of information systems. Command and control centers, such as those found in electrical power companies, manage the entire system infrastructure and are designed to prevent power outages or, when outages are inevitable, restore power to customers within 15 to 20 minutes.

Maj Yahn's research of a power company's command and control center in Birmingham, Alabama found some interesting results. A worker could send out commands to circuit breakers to activate/deactivate generators and a multitude of other system elements from within the command and control center, all with the flick of a few switches. This centralization of commands is possible through the use of a Supervisory Control and Data Acquisition (SCADA) computer monitoring system. Interestingly, one of these systems can control thousands of systems elements, including stations, substations, generators, circuit breakers, and others. The SCADA receives information from system elements and processes it within seconds. In addition, Maj Yahn discovered that because power companies are so concerned about down time, they have devised a system where system engineers can phone in from home, log into the master control unit, and make any necessary changes. Unfortunately, this system also presents wonderful opportunities for hackers similar to the one from St. Petersburg. With a computer, phone lines, and high-

level computer expertise, a hacker could potentially wreak havoc on U.S. electrical power supplies.

Maj Yahn's research also analyzed the important system elements and vulnerability of the Air Traffic Control system and the Federal Reserve's Fedwire system in a similar fashion to the electrical power system. The vulnerability analyses included original models for gauging the relative penetrability of any information system under hypothetical information attack scenarios. Unfortunately, the study shows that while successful IW attacks on these systems require high-level expertise, the information available to the public is sufficient to accomplish such an attack. He concluded these vulnerabilities must be addressed to prevent serious disruption of these systems.

"IW Units: Structure, Composition, and Mission," Maj Greg White

Major White examined the definition of IW, as well as the structure, composition, and mission of IW warfare units. According to Assistant Secretary of Defense Emmet Paige, IW is defined as "Actions taken to achieve information superiority in support of national military strategy by affecting adversary information and information systems while leveraging and defending our information and systems." However, other definitions exist, further reinforcing the fact that a consensus on an IW definition does not exist.

According to Maj White, the mission of IW Units is to protect the Defense Information Infrastructure (DII). As several recent attacks have shown, including the 1994 attack on Rome Laboratories and the 1995 attack on Los Alamos sites, there is a significant security concern regarding information infrastructures. In addition to protecting DII, IW Units should also protect the National Information Infrastructure (NII). The underlying question, however, is whether an attack on information processing systems can be considered an act of war. Article 51 of the UN Charter states "Nothing in the present Charter shall impair the inherent right of individual or collective self-defense if an armed attack occurs against a Member of the United Nations." However, would an information system attack be considered an armed attack? According to Maj White, the answer is unclear.

Maj White suggested that protection of NII may be similar to the "war on drugs," which is guided by several U.S. Codes. These codes clearly state that the military is not to be used to enforce civil law, and prohibit military organizations from directly participating in arrests, searches, and seizures relating to civilian law enforcement. As stated in the 1986 National Security Decision Directive 221, and in compliance with the U.S. Code, the military is charged with supporting the war on drugs by: serving as lead for detecting and monitoring air and maritime transit of illegal drugs; integrating those C³I assets of the federal government dedicated to drug interdiction into an effective network; and approving and funding state plans for expanded use of the National Guard in support of Drug Law Enforcement Activity (DLEA) interdiction and enforcement operations.

The current DoD role in counterdrug operations is to support civilian agencies in several critical areas, including reconnaissance, maintenance, intelligence, analysis, linguistic support, equipment, and facilities and training. Maj White suggested that the IW Unit should assume a similar role as those supporting counterdrug operations in its protection of DII and NII. Specifically, IW Units should serve as the lead for detecting and monitoring data transmissions of illegal hacker activity, integrating C³I assets of the federal government dedicated to information operations into an effective network, and approving and funding state plans for expanded use of the National Guard in support of information operations. Other potential missions of IW Units include gathering and disseminating intelligence on traditional and IW targets, as well as shaping public opinion through the media/direct broadcasting. The media will likely play an enormous role in IW, as it will be international in nature and an instantaneous source of intelligence.

Maj White highlighted several planning concerns of a future information warfare campaign. Some of these concerns include: determining precisely what information is vital to friend/foe at each functional and organizational echelon; determining the purpose of the vital information; analyzing its flow through information infrastructures; assessing the information's vulnerability in different infrastructure elements; and assessing through what means that information can best be protected or exploited.

In conclusion, Maj White recommended the future establishment of a Base Network Control Center, an Information Warfare Center, and Information Warfare Squadrons, among others. The IW Squadrons should be manned with individuals from intelligence, PSYOPS, communications/computer, computer and electrical engineering, and security career fields. He concluded that the possibility of establishing a separate career field for information warriors should be explored.

"Avoiding Technologically-Induced Delusions of Grandeur," Capt Patrick Barker

There is no dispute that the world has entered the Information Age and that Information Warfare (IW) will constitute a significant and increasingly important element of the future battlespace. In light of this, Capt Barker's research focused on answering a question posed by HQ USAF/INXI: What do Air Force personnel need to learn in order to operate effectively in an IW environment? How should the Air Force build a bridge from today's world to the twenty-first century multipolar world?

As it stands today, the Air Force is not prepared to survive in an IW environment, according to Capt Barker. Air Force personnel must learn to view technology as a means towards achieving global situational awareness, as well as a catalyst for IW. Technology opens enormous doors of opportunities and possibilities for the warfighter, but with these opportunities come risks. As the Air Force increasingly relies on sophisticated information systems, it is important to acknowledge that adversaries may attempt to disrupt those delicate systems via IW tactics to cripple Air Force operations.

The Air Force must educate its junior officers on what technology is, the advantages of technology, and its associated risks. Technology is not just a tool, it is also a statement about a nation's culture, who they are, and how they learn. Future officers must understand the linkage between technology and culture to increase their global awareness and to more fully understand the intricacies and subtleties of information warfare. In addition, the information age is questioning the very nature of warfare and what it means, and junior officers should be taught to reassess their notions and understanding of warfare before they can understand information warfare. More importantly, junior officers must be educated for uncertainty and chaos, as the next century will test one's ability to operate in an increasingly uncertain environment.

Preparing Air Force personnel for the next century necessarily requires long-lasting change in the Air Force by redefining its core values and core competencies. Capt Barker suggested that the current core values of "integrity", "Service before self", and "excellence in all we do" make no mention of warfighting, intellectual prowess, or creativity. In addition, Capt Barker suggested that one of the Air Force's core competencies, "information dominance", is unrealistic. Instead, the Air Force should pursue "situational awareness on a global scale" and prepare its personnel to operate effectively in an environment of uncertainty.

In conclusion, he stated the Air Force must prepare its personnel for an uncertain future characterized by IW. However, preparation for the future will entail redefining Air Force core values and core competencies, and these redefinitions must be embraced by the Air Force leadership and all Air Force personnel to ensure that a unified Air Force properly meets the IW challenges of the future.

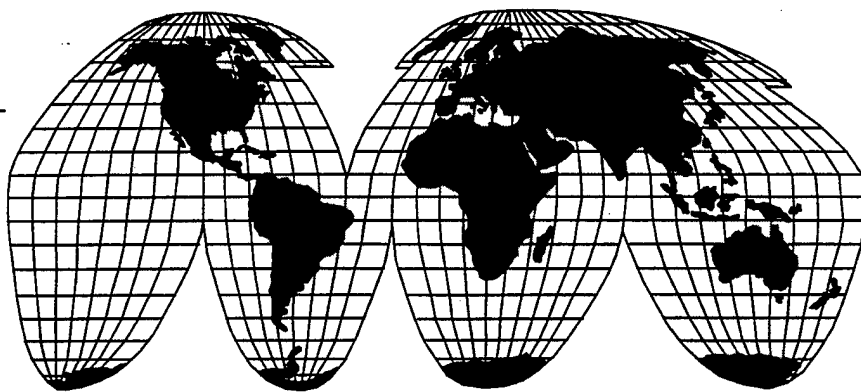
Panel Discussion

Discussion began as a participant questioned who the warriors are in the information age. Maj White responded that anyone can become an IW warrior at any time. IW will be so important in the future that all warriors should be knowledgeable in the field. In addition, IW warriors will come from both the military and civilian sectors, domestically and internationally. Another participant questioned what the mission of an IW Squadron would be. Maj White responded that the mission of IW Squadrons would probably entail supporting the warfighter in field operations, but any more information will be unavailable until an appropriate IW policy is formulated.

The issue of formulating an IW policy triggered many questions, among them the issue of who will be responsible for formulating it. The panel participants responded that no one is informed well enough at this stage to formulate an appropriate policy. However, the President of the United States has already formed a committee to identify vulnerabilities in U.S. information infrastructures and to recommend policy alternatives. Other concerns were expressed, including how an IW policy would fit into our national legal framework. Specifically, questions regarding counter IW attacks, such as back-hacking, and their legality were presented to the panel. Should laws be amended to

account for the subtleties and intricacies of IW? Panel participants agreed that changing laws to suit military IW needs could necessary, but going any further at this point without a national IW policy would be futile.

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Panel 4.

Air Force Planning Issues

Lieutenant Colonel David Estep, Chair
Major Richard Fullerton
Major Richard Simpson
Doctor Peter Taylor
Captain Craig Corey

1996 Research Conference

PANEL 4: AIR FORCE PLANNING ISSUES

Chair: Lt Col David Estep, USAF National Defense Fellow, INSS
Participants: Maj Richard Fullerton, USAFA Department of Econ. and Geog.
Dr. Peter Taylor, USAFA Department of Econ. and Geog.
Capt Craig Corey, Ramstein, Germany
Maj Richard Simpson, USAFA Department of Political Science

PANEL PRESENTATIONS:

"Using Auctions to Reward Research Tournament Winners," Maj Richard Fullerton

With government downsizing and budgetary cutbacks, the DoD must find ways to reduce costs in all areas of operations. Maj Fullerton's paper focused on identifying potential cost-saving opportunities relating to DoD's research and development efforts for new products. Specifically, Maj Fullerton examined the applicability of research tournaments to reduce research costs for DoD.

The theory of research tournaments dictates that firms will willingly expend their own resources to conduct research and development of new projects provided the government makes a credible commitment to reward a prize of known value at a specific future date. Maj Fullerton added that the government could conduct an auction instead of offer a prize at the end of the competition to force firms to bid for their own products. It was suggested that an auction at tournament's end would theoretically lower the government's expected cost of obtaining any given level of research effort.

The challenge of Maj Fullerton's effort was to test whether the economic theory of research tournaments is valid. Several human subjects were placed in an economic setting simulating the conditions of a research tournament. The purpose of the study was to test whether the level of effort exerted by the test subjects approximated the level predicted by research tournament theory. Several experiments were conducted, each considering specific parameters, such as varying the number of competitors.

The results were somewhat surprising. Although the overall level of research effort closely approximated the theoretical predictions, Maj Fullerton stated that the level of effort among individual firms was not uniform. For example, if two competitors were involved in an experiment, one of them would demonstrate significantly less research effort than predicted by theory, whereas the second firm would demonstrate more research effort. However, the average research effort of the two firms did approximate the predicted level.

Another interesting finding was the intense bidding competition that occurred between competitors when forced to participate in an auction. Specifically, Maj Fullerton offered that the reactions resulting from auction bidding seemed to be quite sensitive to the

number of research tournament competitors. If the number of competitors was small, such as two, then the cost of the tournament was approximately equal to the predicted, theoretical cost. However, a greater number of competitors demonstrated increasingly aggressive bidding behavior, resulting in research losses as companies conducted more research than they would be paid for at tournament's end. Major Fullerton suggested that auctions would enable the government to reap substantial research value for its money. However, auctions should be used with caution as they could drive firms out of the defense industry.

In summary, Maj Fullerton's research demonstrates that research tournaments can be beneficial towards improving research efforts by firms. It was suggested that research tournaments could in fact change the way DoD does business in all areas by placing greater emphasis on competitive market forces to keep defense costs in check and reducing the requirement of regulatory oversight.

"National Defense Strategy vs the Budget: The Post Cold-War Battle," Dr. Peter Taylor

Dr. Taylor's paper focused on analyzing the future pressures on defense and Air Force budgets. In the last several years, both the defense and Air Force budgets have experienced substantial reductions as a result of reduced post-cold war threats. Moreover, there is a clearly diverging path between the current national defense strategy, known as the Bottom-Up Review (BUR), and available budget resources required to support that strategy.

The funding gap is evident yearly between the budgets that DoD publishes and the BUR force requirements. Patterns seem to indicate that the gap will likely increase in the next decade. Unfortunately, current underfunding and increased military drawdowns have promoted short-term, not long-long term, solutions to problems. As a result, funds that would have normally been used to address longer-term issues are now being funneled to maintain current readiness. These short-term measures have come at the expense of the military's stock of war making capital. Dr. Taylor suggested that if more attention is not given to the aging military stock, military hardware will reach obsolescence before the funds necessary to correct the problem will become available, if ever.

Another concern of the defense budget is its lack of future stability. This instability results from the defense budget's dependence on the overall national budget. If the national budget, or even parts of the budget, are unstable, then the defense budget, as a subset of the national budget, will be unstable as well.

Both the President and Congress have proposed fixes to the national budget problem. However, as Dr. Taylor stated, both programs lack specifics about where program spending adjustments will come from, and both plans postpone the toughest decisions instead of confronting them head-on. Some of these decisions involve how to

handle the growing deficits that are projected to crash the economy by 2025, as well as how to handle entitlement programs that are exceeding the nation's ability to pay. Also, several aspects of both plans do not seem politically feasible. For example, the President's budget projects defense budget increases in the next decade, but his plan does not appear politically feasible in light of the domestic programs that will be hard hit. As a result, the gap between the DoD budget and the BUR has been estimated to be between \$20 billion to \$100 billion, if not greater.

Only two realistic possibilities exist for closing the funding gap. First, the defense budget will have to change. However, given the trend of decreasing budgets and the current uncertainties about our national security threats, it is unlikely that defense budgets will increase to accommodate the defense strategy. Therefore, it is increasingly likely that the second possibility, to change the defense strategy, may be the only option. Official reviews of national defense strategy may recommend that it move to accommodate available budgets.

So how will the Air Force be affected by this uncertain budgetary world? According to Dr. Taylor, how the Air Force will fit into the changing strategy is highly uncertain. Historically, the Air Force has received a constant share of total DoD funds. If this pattern holds, the Air Force should experience budgetary declines similar in percentage to declines in total defense spending. However, as Dr. Taylor pointed out, it is difficult to say what exactly will happen to the Air Force until a new official defense strategy is articulated.

"The Goldwater-Nichols Act of 1986 and its Effects on the U.S. Air Force," Capt Craig Corey

The Goldwater-Nichols Act of 1986, according to Capt Corey, has been a successful piece of military reform legislation. Specifically, its success has come from forcing individual Services to operate more jointly and to reduce interservice rivalry. In addition, the Goldwater-Nichols Act added essential structure to the Chain of Command by making the Chairman of the Joint Chiefs of Staff the principal military advisor to the President as well as supervisor of the Joint Staff, and creating a Vice-Chairman to serve as the Chairman's deputy. Perhaps the greatest success of the Goldwater-Nichols Act is that it has not infringed on Title X responsibilities of the Service chiefs to train and equip their forces. Instead, it has allowed the Service chiefs to train and equip their forces to fight in a joint environment.

Capt Corey suggested that although Air Force doctrine can be used either unilaterally or in a joint endeavor, it is not inherently joint. However, he suggested Air Force capabilities are best used in a joint environment, where successful use of airpower directly affects all aspects of the battlefield. Several examples of the benefits of airpower in joint environments were offered, including the opportunities that control of the air provide to ground forces by allowing them to operate in a secure environment. In addition,

Capt Corey offered that control of the aerospace environment also allows numerous possibilities to conduct a campaign. Nevertheless, he asserted that the most significant Air Force contribution to the joint environment can be found in joint doctrine under the concept of the Joint Forces Air Component Commander (JFACC), where the JFACC is not necessarily from the Air Force. Rather, the type of airpower and in what medium it will be used are the criteria used to determine from what Service the JFACC will come from.

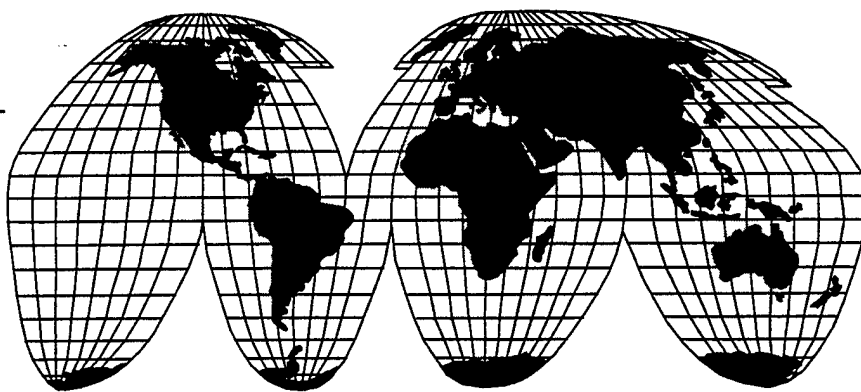
Discussions then turned to the Joint Requirements Oversight Council (JROC). Capt Corey stated that the objective of the JROC is to place the interests of the entire military ahead of individual Service interests, as well as to eliminate redundancies in Service procurement efforts. In order to assess the contributions of individual weapons systems to the joint environment, Joint Warfighting Capabilities Assessments (JWCA) were created. However, several problems have plagued the success of JWCAs, including a lack of overlapping evaluation of systems, a misuse of operations research methods, and a lack of time necessary to properly complete the process.

Capt Corey proposed several steps to correct the JWCA process. First, he recommended that decisions on individual weapons systems should be made by the staffs of the Services and the unified commands, not the Joint Staff. Second, the number of committees and consultants involved with the JWCA process should be reduced. Third, a process facilitating the ability of JWCAs to talk with each other should be developed. Fourth, JROC and JWCA issues should be resolved by personnel whose jobs *only* involve JROC and JWCA issues, not by others whose primary responsibilities lie elsewhere.

The Goldwater-Nichols Act also sought to address another problem within joint operations: the quality of officers assigned to joint billets. In the past, Joint Staff officers were not promoted at the same rate as their peers in their parent Service, nor were they properly prepared for their joint assignments. The Goldwater-Nichols Act targeted these problems by establishing a joint career specialty in each Service, strengthening the requirement for joint duty to be promoted to general rank, and mandating that joint officers be promoted at equal rates with Service officers, among others. However, these solutions have created a problem for the Services because they have found it difficult to remove highly qualified officers from Service jobs and place them in joint billets. The Services still require specific Service jobs to be held by field grade officers to achieve the highest ranks. For example, two critical Air Force positions identified by the Air Force include squadron commander and squadron operations officer. Capt Corey concluded by stating that until these and other deficiencies are corrected, the Goldwater-Nichols Act will remain a successful, but far from perfect, legislation addressing the needs of joint operation requirements.

“Intervening in Chaos: A Call for New Doctrine,” Maj Richard Simpson

Maj Simpson began his discussion by stating that U.S. national security interests have historically been imbedded in an international system composed of independent and



Panel 5.

Environmental Security

**Mister Bob Jarrett, Chair
Lieutenant Colonel Brian Cullis
Major Russell Defusco
Doctor James Smith
Doctor Samuel Ariaratnam
Captain Laura Antalík**

1996 Research Conference

sovereign states operating in the Westphalian tradition. However, he suggested that U.S. interests and the international system have changed, as evidenced by U.S. engagement in "justice"-motivated interventions involving interdependent states.

In this justice-oriented realm, several challenges face the United States, including states violating the norms of sovereignty, state-sponsored or independent groups violating the norms of sovereignty, or disparate sub-state groups (failed states) perpetrating grave injustices. A number of solutions have been developed to offset the majority of these challenges. As regards the challenge posed by states violating the norms of sovereignty, the solution involves strategic paralysis where centers of gravity and cognitive centers are destroyed. The solution to state-sponsored or independent groups violating the norms of sovereignty is also straightforward and involves counter-insurgency methods such as superimposing "state" characteristics on the insurgent group. However, failed states continue to pose a difficult challenge to the United States.

Maj Simpson suggested that current doctrine is inadequate for the task of guiding the use of U.S. military forces as an instrument of national power or as a means to protect U.S. interests against failed states. The problem with current state-centric doctrine such as Warden's "Enemy as a System" and Boyd's "A Discourse on Winning and Losing" is that their success depends on several assumptions, including: the object of military force is an actual state or an insurgency group mimicking one; all actors approach conflict with a western, rational mentality; and the imposition of costs and risks on the opposing actor always succeeds in deterring or compelling the enemy towards some desired end. Disparate sub-state groups reject these Westphalian norms, have objectives at odds with familiar motives, and are capable of perpetrating grave injustices. These failed states are a significant threat to both the desired international system and the notion of justice.

Maj Simpson continued that failed states repudiate several current U.S. doctrinal foundations. For example, sub-states have no clear political objectives to guide or limit their conduct; they have no clear, traditional centers of gravity or articulated ideology for governing; and they follow a non-western decision making process. As a result, they are not susceptible to military action guided by traditional doctrine. Failed states have themselves lost the ability to act as unitary rational actors and instead have disintegrated into multiple sub-state units motivated by survival and a high propensity to solve conflict through genocide and extreme violence. Maj Simpson suggested that a new doctrine must be developed to properly address the unique character of these failed states.

A new doctrinal approach must understand the dynamics of failed states and focus on reinvigorating the state to rejoin the desired international system. To achieve this, failed state doctrine must simultaneously apply both constructive and destructive force against force points in multiple levels unique to each operation, including sub-state groups, individuals, and institutions. Maj Simpson suggested that the desired end of a viable and self-sustaining state requires that force not only neutralize the opposing sub-state units, but also help drive each group back into a reemergent state. Only when the development of

this new doctrine is complete will the United States increase its chances of success of missions involving failed states.

Panel Discussion

Discussion commenced with a question regarding why the United States is the only country responsible for addressing the issues of failed states, especially in light of decreasing defense budgets. Maj Simpson responded that the United States should not be the only nation addressing these issues. However, the U.S. government is the only government at this time with a tendency towards pursuing the issues of failed states. Efforts to recruit the assistance of other nations with relevant experience, such as Canada's experience with peacekeeping missions, should be a top U.S. priority.

Another participant asked whether Maj Fullerton's research tournament model would work as well in the real world as it has in the laboratory. Maj Fullerton responded that the research tournament model has several assumptions which might limit its applicability to real world scenarios. Most notably, the model assumes that the government can commit to awarding the tournament prize. Unfortunately, decreasing budgets and fiscal uncertainty do not allow the U.S. government to commit to these prizes, thus raising questions of the model's applicability. Other potential obstacles include political constraints which could present problems for the model. Maj Fullerton suggested that political constraints should only have a deleterious effect on research tournaments involving major systems, such as entire aircraft. However, research tournaments involving micro systems, such as components of an aircraft, should not be significantly affected by political constraints.

Finally, a participant noted that one of the desired outcomes of the Goldwater-Nichols Act of 1986 was to put more power into the hands of regional CINCs. The question regarding whether the CINCs have been given more power was addressed to Capt Corey, who responded that the CINCs have, in fact, benefited from the legislation. The entire military has benefited from the strengthening of the Unified Command Structure of the CINCs.

PANEL 5: ENVIRONMENTAL SECURITY

Chair: Mr. Bob Jarrett, Army Environmental Policy Institute

Participants: Maj Russell Defusco, USAFA Department of Biology
Lt Col Brian Cullis, USAFA Department of Econ. and Geog.
Dr. James Smith, USAFA Military Arts and Sciences
Capt Laura Antalik, USAFA Department of Civil Engineering
Dr. Samuel Ariaratnam, University of Alberta, Edmonton

PANEL PRESENTATIONS:

"Using Geographic Information Systems to Model Bird Distributions and Populations on a Continental Scale," Lt Col Brian Cullis and Maj Russell Defusco

Maj Defusco began his presentation by stating that environmental issues such as resource depletion and pollution will be at the forefront of future military issues. However, other less known environmental issues must also be given considerable attention. Specifically, the research efforts of Maj Defusco and Lt Col Cullis focused on a the problem of bird strikes on military aircraft. Although the problem has existed for a number of years, not enough attention has been given to properly address the issue.

Several military aircraft have experienced bird strikes. According to Maj Defusco, the last 10 years has seen the destruction of more than 30 aircraft and the loss of numerous pilots to bird strikes, at a cost of millions of dollars to the U.S. government. Several examples of bird strikes were presented, including the recent loss of an Air Force F-16 and its pilot to a strike by a turkey vulture as well as the loss of an Air Force AWACS in Alaska to a flock of geese. All crew members lost their lives in the AWACS incident.

Maj Defusco noted that all the Services have experienced bird strike problems, but the Marine Corps has experienced the greatest number of casualties. The reason for this is the Marines fly the greatest number of low-level and range routes of the Services, and bird strikes are most frequent along these routes. Several units among the Services have been using the Bird Avoidance Model (BAM) for the past 15 years. Those units that have used the BAM have decreased the number of bird strikes by 30 to 40 percent. The problem, however, is that only a few military units are using the BAM and the current BAM is outdated.

The current BAM is good, as it accounts for water fowl, ducks, geese, and swans. However, an updated version is required which takes turkey vultures, presenting the biggest problem to aircraft, into account. In addition, the new BAM should use physiographic, geographic, and climatic correlates to describe the breeding and wintering distribution and abundance patterns of turkey vultures in the United States and model the hazards posed to aircraft by these birds.

The research conducted by Maj Defusco and Lt Col Cullis correlated more than 30 years' worth of data on turkey vultures with remotely sensed and ground sampled environmental data in a raster-based geographic information system (GIS). Over 200 environmental factors were considered in the study, including temperature, thermal reflectance, precipitation, snow cover, vegetation types, and elevation, among others. Several interesting results were found, including the strong correlation between vulture numbers and geophysical factors, as well as the strong positive correlation between wintering vultures and forested areas.

Maj Defusco concluded his presentation by suggesting that the research results should be used to build an improved BAM. Military units could use the new BAM to better determine turkey vulture habitat requirements, as well as the requirements of other birds, to identify specific areas where birds pose potential hazards to aircraft. A good understanding of hazardous areas can assist with the selection of safer aviation routes.

"Environmental Federalism and U.S. Military Installations," Dr. James Smith

Military facilities are facing increasingly complex environmental compliance situations. As the responsibility for environmental regulations shifts from the federal government to state governments, military facilities will face compliance situations riddled with multiple bureaucracies, layered state and federal regulations, multiple reporting requirements, and multiple mission priorities. Military installations are potential environmental polluters, and as such, the facility's environmental compliance official will serve many masters and will respond to increasingly complex pressures. Dr. Smith's research focused on identifying these complexities and recommending an appropriate compliance strategy and organization to address them.

The development of environmental policy, according to Dr. Smith, has been incremental and fragmented. Specifically, environmental policy has historically progressed with advances in politics and science, and has been increasingly fragmented between pollution mediums, including water, air, and waste. In addition, recent developments have included increased responsibility sharing between national, state, and local governments in the formulation and implementation of environmental standards. However, he noted that state governments are playing an increasingly important role in environmental policy and therefore military facilities must understand state-level actions and trends.

Dr. Smith suggested that state actions are motivated primarily by political factors, bureaucratic capability, and changes in state population. Other factors, including economic competition with other states and state wealth, were also determined relevant to understanding state actions. Empirical evidence in studies of state environmental regulation have shown that a state's environmental policy is a result of a combination of the severity of the state's pollution problem, the partisanship of state politics, the state's wealth, and the state's organizational capacity. Close monitoring of these factors must be

incorporated into the compliance strategy of military installations to ensure they can meet local demands.

A facility's compliance strategy may prove most beneficial if built around the principle of centralized control and decentralized execution. Dr. Smith suggested that national input from a centralized control is valuable, particularly in light of the continuing role of national standards. However, the increasing role played by state and local governments demands that bases also be adaptable to fit local conditions and regulations. This can only be effectively accomplished if bases are allowed the freedom to adapt through decentralization of the execution of compliance strategies.

It was also recommended that base compliance strategies incorporate principles of continuity, coherence, and communications. Continuity and coherence are essential in light of incremental policy changes and fragmented policies and organizations which characterize today's environmental enforcement. Communication is also essential to not only help state regulators understand the unique demands of the military mission, but to also ensure that bases communicate with each other to learn of issues which will likely affect other bases in the near future.

Dr. Smith concluded his presentation by reiterating the increasing role of state governments in environmental policy regulation and implementation. In order to complete their military missions within environmental constraints, bases must adapt national direction to create an appropriate compliance strategy to meet local demands.

"Environmental Security and Infrastructure in Poland," Capt Laura Antalik and Dr. Samuel Ariaratnam

The research conducted by Capt Antalik and Dr. Ariaratnam focused on providing a brief history of environmental conditions in Poland and an overview of current Polish efforts designed to correct past environmental mistakes. As part of the former Communist Bloc, Poland was under Soviet rule for many years after the end of World War II. While under Soviet rule, Poland suffered through years of unregulated industrial development and environmental neglect, resulting in severe damage to air, water, soil, and forest life.

However, since the fall of the Soviet Union in 1989, Poland has not only undergone substantial democratic reforms, but it has also made a priority of reconciling economic development with environmental protection. In fact, Poland has made significant progress in improving its environment. Specifically, Poland has placed great importance in reducing the pollution of its water, air, and soil, as well as reducing its production of waste. The Polish government created several environmental policies and programs and has restructured the country's industrial and energy sectors to improve environmental conditions within its borders.

Capt Antalik and Dr. Ariaratnam offered several specific examples of environmental programs pursued by the Polish government. First, a national air monitoring network consisting of 49 basic stations and 8,000 supervising stations was created with the aid of foreign assistance. The network monitors air pollution in Poland's lower atmosphere and evaluates trends and changes in air quality. Results of network analysis are displayed publicly throughout the country. Second, Polish water quality is monitored by several government services, including the State Geological Institute, the State Inspectorate for Environmental Protection, and others. These agencies provide several water quality monitoring networks that monitor conditions in Poland's lakes, rivers, groundwater, and international borders. Third, the State Environmental Protection Inspectorate is charged with regulating polluting industries. The Inspectorate is authorized to collect fines from pollution violators and deposit the fines in the National Fund for Environmental Protection and Water Resource Management.

Perhaps the greatest environmental challenge facing Poland comes from Petroleum, Oil, and Lubricant (POL) deposits in the soil of military installations. Most of this pollution is found at former Soviet military bases where contamination likely began 20 or 30 years ago. As POL contamination potentially affects the quality of soil and ground water, the Polish military is currently testing all military installations and attempting to clean up contaminated bases. However, the identification and clean up processes are extremely expensive and the Polish military cannot demand former Soviet support or compensation for its actions. Dr. Ariaratnam offered that one of the conditions for Soviet withdrawal was that Poland would never make any claims for environmental damages.

Other environmental challenges face Poland, especially the potential for international environmental conflicts with its seven neighbors, including Germany, the Czech Republic, the Slovak Republic, the Ukraine, Belarus, Lithuania, and Russia. The Polish government has addressed these concerns through the negotiation and implementation of several bilateral agreements on water management and pollution, air pollution control, and nature protection.

In conclusion, Dr. Ariaratnam and Capt Antalik stated that Poland has made significant progress in addressing its environmental problems. The Polish government and people have demonstrated a sincere desire to improve the environmental conditions of their country. However, the cost of environmental programs is extremely high, and Poland has found that funding restrictions determine the level of environmental progress it can make. Only with the assistance of foreign governments will Poland achieve the economic and environmental levels of Western powers.

Panel Discussion

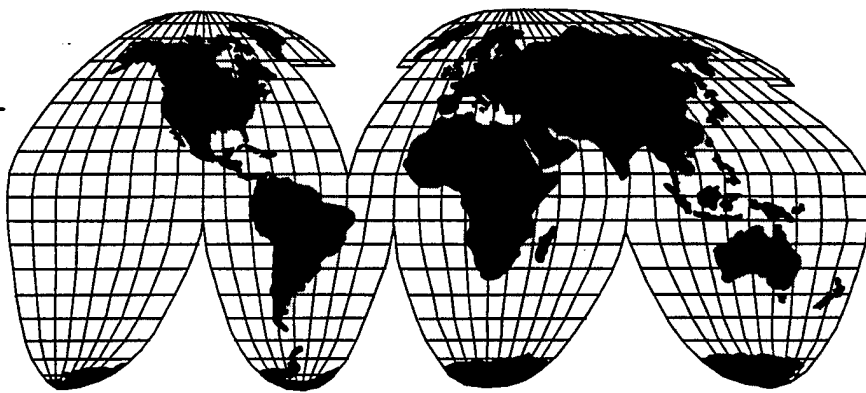
One participant questioned whether Poland, with its abundance of foreign aid and its desire to improve its environment, was an anomaly as compared to other nations of the Eastern Bloc. Capt Antalik and Dr. Ariaratnam responded that although Poland may not be an anomaly, it certainly is the most progressive country in Eastern Europe. As a result,

Poland was selected as the region's environmental representative. Other nations in Eastern Europe have just begun environmental assessments and are significantly behind Poland in all areas of environmental reforms.

Another participant presented a question on the future of Russian environmental policy. Dr. Ariaratnam replied he had the distinct impression that Russian leaders were still ex-communists and that it will take some time before any major attitude changes will be realized in the Russian government. In addition, it was offered that the lack of Russian environmental progress results from both the old Communist mindset and, more importantly, a lack of funds to pursue environmental programs.

Finally, the question was raised whether bird strikes also affected commercial aviation. Maj Defusco responded that bird strikes pose a serious problem for commercial aviators, resulting in over 500 million dollars in damage annually. However, bird strikes on commercial airplanes occur only during take offs and landings, whereas military aircraft are exposed through low-level flying as well. Maj Defusco assured that the military's efforts to address bird strikes is being coordinated with the Federal Aviation Administration.

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Panel 6.

Regional Security (Europe)

**Major Mary Beth Ulrich, Chair
Doctor Charles Krupnik
Captain Stephen Lambert
Captain David Miller
Captain Stephen Drago
Cadet First Class Jason Arnold**

1996 Research Conference

PANEL 6: REGIONAL SECURITY (Europe)

Chair: Maj Mary Beth Ulrich, USAFA Department of Political Science

Participants: Cadet First Class Jason Arnold, USAFA Cadet Squadron 34

Dr. Charles Krupnik, USAFA Military Arts and Sciences

Capt Stephen Lambert, Naval Postgraduate School

Capt David Miller, Naval Postgraduate School

Capt Stephen Drago, USAFA Military Arts and Sciences

PANEL PRESENTATIONS:

“NATO Enlargement: Issues and Answers,” Cadet Jason Arnold

Cadet Arnold's discussion focused on the questions concerning NATO enlargement, including the purpose of enlargement, what the Alliance will look like afterwards, and Russia's opposition and possible membership. Cadet Arnold offered that the purpose of NATO enlargement is to build an improved post-Cold War security architecture that provides increased stability and security for all nations in the Euro-Atlantic area, without recreating dividing lines. It is believed that failure of NATO to expand could result in a loss of public support in NATO member nations and an eventual lapse into irrelevance. NATO expansion, on the other hand, offers revitalization and enhanced relevance in Europe's emerging strategic landscape.

It was suggested that NATO enlargement would have several beneficial effects on new members, including the contribution of democratic reforms, good neighborly relations, integration and cooperation based on shared democratic values, and habits of cooperation, consultation, and consensus building, among others. The benefits will come with a cost, however, as several expectations will be placed on new members. Among these expectations include a commitment to consensus building, a commitment to the objectives and undertakings of the Partnership for Peace program, and a contribution to Alliance budgets and to the defense of NATO members.

Several important questions regarding NATO enlargement involve Russia. Historically, Russians have viewed NATO as anti-Russian, and that view still holds today. Thus, a negative Russian reaction to expansion is probably unavoidable, and although NATO maintains that no nation will exert a veto over its enlargement, it must not destabilize the region by alienating Russia. It was suggested that while NATO adapts to the expectations of Central Europe, it should also focus on building a strong NATO-Russia relationship and on renewing and extending cooperation between Russia and the Alliance beyond the Partnership for Peace program. In addition, building a strong NATO-Russia relationship is important because of the unlikeliness that Russia will join the Alliance. Russia's internal instability, the fact that it's not a North Atlantic or European state, it's probable unwillingness to reach consensus, and its size make it an unlikely candidate for accession into the Alliance.

The enlargement processes of NATO and the European Union are linked, as each organization will consider developments in the other during the process. Four primary purposes are served by the NATO/EU link: the concurrent expansion invigorates the efforts to promote stability; the EU can provide Central Europe economic growth and political integration with Western Europe; the EU reduces a potential Russian backlash to Central European integration into Western Europe; and finally, the EU provides common membership in NATO and the WEU. However, to ensure a successful NATO/EU link, NATO must enlarge first to avoid "backdoor" security commitments.

Integrating the military forces and capabilities of new NATO members raises serious cost issues. Cadet Arnold suggested that one alternative to reducing the costs of enlargement consists of configuring new members' forces only in the areas of C3I and logistics support. To further reduce costs, new members could be asked to contribute strategic position rather than strategic forces. Another option available to the Alliance involves improving the existing militaries of new members by upgrading them sufficiently where integration with NATO air defenses, logistics organizations, and communications networks is feasible. Whatever option NATO chooses to pursue new member accessions, it must consider costs carefully.

The accession of new members will necessitate a NATO transformation from a traditional military alliance into an organization for addressing Europe's new security challenges. Specifically, NATO must not only continue maintaining the capacity for territorial defense, but also place greater emphasis on contingency force projection. Its purpose will be twofold: collective defense and conflict prevention. The NATO command structure must be flexible enough to absorb new members without requiring reinvention with each accession. Perhaps more importantly, the Alliance must ensure that it maintains its ability to achieve consensus of its members to make important decisions quickly. As Cadet Arnold stated, if there is no consensus, there are no decisions. NATO's transformation resulting from new member accessions will not affect its nuclear posture, as there is no need to change or modify any aspect of NATO's current nuclear posture or policy.

Deciding whom to extend an invitation to join NATO will be largely a political decision. Historically, NATO has refused to issue a list of criteria to determine what nations are eligible for NATO membership. Specifying additional criteria at this point would be inconsistent with past member accessions and could result in an accusation that NATO has double standards. Whatever the criteria used, there are concerns that NATO would evolve from a security organization into primarily a policy organization if it were to expand too much. Cadet Arnold suggested that a common world-view was unlikely in a large community of nations, and that commonality could not be maintained in an organization of too many members. As a result, it was offered that the size of NATO should be limited to no more than 25 nations.

It is unclear exactly when NATO will announce to whom it will offer membership. Cadet Arnold suggested that although the Alliance will probably address the enlargement

process at its next Ministerial meeting in December 1996, it is unlikely that specific names and dates about new members will be given at the meeting. In addition, it was offered that new members will likely enter NATO around April of 1999, NATO's 50th anniversary. The enlargement process will likely continue past NATO's 50th anniversary, as it is expected to be an evolutionary process to continue indefinitely.

"The Emerging OSCE Role in Europe's Security Architecture," Dr. Charles Krupnik

Dr. Krupnik's discussion began with a brief history of the Organization for Security and Cooperation in Europe (OSCE), which was originally known as the Conference on Security and Cooperation (CSCE). The CSCE goes back as far as the 1950's when the Soviet Union presented a proposal for a conference that would sanctify the post-World War II borders within Europe. However, the East-West tensions of the Cold War postponed serious discussions on the issue until the early 1970's, when NATO countries finally agreed to discuss European boundaries as part of a more comprehensive negotiating framework. The conference that followed led to the CSCE Final Act, signed in Helsinki, Finland, in August 1975.

Since the end of the Cold War, the CSCE has gradually been strengthened and institutionalized and has established a working relationship with NATO such that the Alliance can conduct crisis intervention operations on behalf of the CSCE. Dr. Krupnik stated that progress for the CSCE took time because several nations, including the United States, were reluctant to support the CSCE due to perceptions that its influence would be nominal and its growth would reduce the importance of NATO.

The CSCE changed its name to the Organization for Security and Cooperation (OSCE) on January 1, 1995 to reflect its increasingly institutional status. It has become a venue for discussing a wide variety of security issues, including arms control and Confidence and Security Building Measures (CSBMs). It provides all European nations a voice in regional security debates. The OSCE has also become increasingly involved with field work. The most recent example includes its responsibility for supervising the September 1996 elections in Bosnia. Other notable examples include its missions in the Republic of Georgia, Moldova, Estonia, and the Ukraine, where each mission strives for the same result: to resolve differences before violence erupts.

Although the OSCE is by no means a strong security regime and certainly not a rival for NATO or the EU, Dr. Krupnik emphasized that its flexible charter allows it to engage in a variety of activities under an international umbrella. In addition, its intergovernmental nature fosters an environment allowing OSCE diplomats to use home country resources to achieve OSCE goals. Such an environment is particularly beneficial to Western countries which have assets to spare, for they generally have significant influence in the operation of the OSCE.

In conclusion, Dr. Krupnik stated that the OSCE has come a long way since its humble beginnings in the 1950's. It has significantly strengthened its role in security affairs and continues to play an integral role in preventive diplomacy throughout the world. However, he also noted that there is no expectation that the OSCE will strongly increase its relative position in Europe's security hierarchy. Rather, the OSCE will likely continue its low-key, yet useful, preventive diplomacy.

"U.S. Nuclear Weapons in Europe: Current Environment and Prospects for the Future," Capt Stephen Lambert and Capt David Miller

The end of the Cold War has forced Western political and strategic elites to articulate future roles of nuclear weapons. Specifically, what are the future prospects for U.S. nuclear weapons deployed in NATO Europe, and what are plausible policy options involving these U.S. nuclear forces? What are the implications of a U.S. withdrawal of its nuclear weapons in Europe? Capt Lambert and Capt Miller suggested that before these questions can be answered, a clear understanding of the Eurasian environment and the underlying threats facing the United States and NATO must be understood.

Two principal threats face NATO: Russian nuclear weapons and proliferation of Weapons of Mass Destruction (WMD). With the collapse of the Soviet empire, Russia has faced serious challenges affecting its ability to meet its security needs. Specifically, Russia is suffering from conventional force deficiencies and will likely continue to do so for the foreseeable future. As a result, Capt Lambert and Capt Miller suggested that nuclear weapons will probably play an increasing role not only in the rhetoric, but also in the operational capabilities and doctrine of Russian military power.

WMD proliferation is also a significant threat facing NATO. Capt Lambert and Capt Miller noted that NATO's declaratory nuclear doctrine seems to affect WMD proliferation in two distinct ways. First, NATO nuclear weapons *do not* seem to deter the acquisition of WMD by other states. Second, NATO nuclear weapons seem to deter the employment of WMD by states with interests opposing those of the United States and NATO. It was suggested that the receding role of nuclear weapons in Alliance doctrine may also be contributing to the problem of WMD proliferation by giving the perception that the Alliance is unwilling to posture and employ nuclear weapons.

Nuclear perceptions are also important among Alliance members. In general, NATO's current nuclear posture is supported by many officials in the major NATO European countries. However, NATO's nuclear weapons no longer command the same degree of public and official support that they did during the Cold War. As a result, NATO members are concerned about any further erosion of U.S. nuclear forces and would consider the removal of non-strategic nuclear forces (NSNF) troubling.

More specific nuclear perception concerns exist along NATO's Southern Flank. In Greece and Italy, participation in Alliance nuclear affairs is perceived as a means to

enhancing the national image as a "good ally." By contrast, Turkey's perception of NATO's nuclear posture is considered an essential aspect of national security. Capt Lambert and Capt Miller suggested that there is a substantial chance that Turkey will seriously consider implementing a national nuclear program if it perceives itself to be unprotected.

In light of these threats and perceptions, four major scenarios potentially affecting the future of U.S. nuclear forces in Europe were identified and their implications discussed. The first scenario involves the continuation of the nuclear status quo, specifically the enduring presence of U.S. nuclear weapons in Europe. However, several key issues of concern relating to this scenario exist. Among them include concern over the future reliability, safety, and credibility of the U.S. nuclear stockpile resulting from several factors: the unproven viability of the Scientific Stockpile Management Program (SSMP); the inefficiencies in the Department of Energy's (DOE) stockpile surveillance program; the persistent failure to establish a new tritium production source; and the substantial budgetary shortfall for the SSMP and stockpile surveillance programs. Other issues of concern over continuing the nuclear status quo include the potential that debates regarding nuclear weapons in light of NATO enlargement will focus unwelcome attention on NATO's nuclear weapons in the future, as well as concern that no-first-use proposals and nuclear weapons delegitimization efforts are increasingly capturing the public spotlight.

The second scenario, according to Capt Lambert and Capt Miller, involves a unilateral withdrawal of U.S. nuclear forces from Europe. The basis for this scenario is the uncertain public response resulting from a potential dramatic event involving nuclear weapons. Public opinion would be difficult to predict and influence. Several examples of nuclear incidents were cited, among them a security breach at a nuclear weapons facility, or a nuclear accident involving either non-military or military nuclear applications. Should a unilateral withdrawal of U.S. nuclear forces result from such an incident, the damage to NATO's deterrent capabilities could be mitigated by alternatives such as reconstitution or substitution. In addition, it was suggested that reassurance schemes might also prove beneficial. Some of these schemes include: increased Allied participation in the U.S. nuclear decision-making process, increased emphasis on the importance of NATO's nuclear decision-making process, as well as Allied participation in manning offshore nuclear systems.

The third scenario involves a West European Nuclear Identity (WNI), where a multi-national European nuclear deterrent would be created after the withdrawal of U.S. nuclear forces from Europe. Capt Lambert and Capt Miller recommended the regime be created within the NATO framework due to its already established nuclear risk sharing mechanisms. However, the challenge of the regime would be to establish the credibility of nuclear deterrence. The only way to establish such credibility is to demonstrate a willingness to use that force.

The fourth scenario involves the creation of an arms control regime to address security issues affecting NATO. Specifically, Capt Lambert and Capt Miller introduced

the concept of an Air-Launched Nuclear Forces Regime (ANF). The purpose of the regime would be to reduce and eliminate Russian, United States and French air-delivered nuclear warheads, not delivery systems. The ANF process would have three stages. The first stage would involve an extensive initial agreement, where facilities and weapons numbers would be declared and verification protocol decided. The second stage would involve a significant warhead reduction and elimination agreement. Finally, the third stage would involve further deep reductions to low thresholds and weapons category elimination.

Capt Lambert and Capt Miller concluded their discussion by stating that regardless of the future direction that policy makers choose, the Alliance must define the future of its nuclear weapons posture based on its own security requirements, not on reactions to moves made by other actors seeking to capitalize on NATO's current aversion to addressing nuclear issues publicly. As the Eurasian security environment evolves, both the United States and NATO must be prepared to confront the possible withdrawal of remaining U.S. nuclear weapons from Europe.

"Three Reasons Why the United States Still Needs NATO," Capt Stephen Drago

Capt Drago's research focused on outlining the reasons why continued participation in NATO is essential for the United States to achieve its security objectives in Europe. Specifically, his paper outlines what U.S. national security, national military, and European theater strategic goals are and how U.S. participation in NATO can promote achievement of those goals.

The U.S. National Security Strategy of Engagement and Enlargement consists of three separate goals, including bolstering U.S. economic revitalization, promoting democracy abroad, and preparing military forces to fight. The U.S. National Military Strategy goals are to promote stability and to thwart aggression. Lastly, EUCOM's Strategy of Engagement and Preparedness consists of three strategic concepts, including Engagement in Peacetime, Fight to Win, and Crisis Response. Capt Drago suggested that a link of strategic concepts runs through U.S. national security, national military, and European theater goals. These strategic concepts include Regional Stability, Readiness and Deterrence, and Crisis Response.

Capt Drago stated that the three reasons why the United States still needs NATO include the following major threats to regional stability: war in Eastern Europe, war in Western Europe, and nuclear proliferation. The major threat to readiness and deterrence comes from the Southern and Eastern flanks, or more specifically, from the area of the former Soviet Union. Crisis response is important both within and outside of EUCOM's Area of Operations (AOR), as evidenced by operations in Kuwait, Rwanda, the former Yugoslavia, and Nagorno-Karabakh.

NATO enables the United States to address these threats in and around EUCOM's AOR. It promotes stability in both Eastern and Western Europe and provides a security

structure to counter nuclear proliferation. In addition, NATO also provides a mechanism to counter the possibility of a resurgent, revanchist threat emanating from the area of the former Soviet Union, as well as the infrastructure, systems integration/interoperability, and legitimacy necessary for successful crisis response.

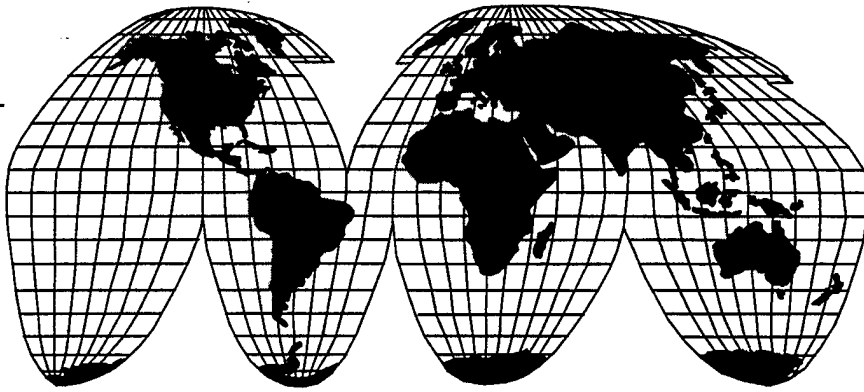
In conclusion, Capt Drago suggested that the United States maintain, and perhaps maximize, its influence in Europe in order to secure that its interests in the EUCOM AOR are satisfied. However, he also recommended the United States should maintain its influence while at the same time minimizing its defense contributions to NATO. Two alternatives to minimizing costs were offered, including achieving marginal cost-sharing schemes as regards NATO infrastructure and Partnership for Peace (PfP), as well as increasing European perceptions of U.S. defense contributions while also channeling resources into assets that provide both "private and public" benefits.

Panel Discussion

One participant inquired about the seeming contradiction that there should be no specific criteria for new NATO members, yet all members must adhere to NATO principles. Cadet Arnold agreed that there appeared to be a disconnect with this policy, however, he added that the specific criteria required for new NATO members can be found "under the table." In addition, the question was asked whether it would be dangerous to admit members for political reasons. Again, Cadet Arnold agreed that choosing new members on the basis of political interest was dangerous because of the possibility of setting double standards on NATO membership, but that it was the best option available to NATO.

In discussing NATO enlargement, a participant suggested that Russia has threatened to link START II ratification to NATO enlargement. In other words, the Russians may opt not to ratify START II should NATO choose to enlarge. The question posed to Cadet Arnold was, given the choice, which was more important to the United States, NATO enlargement or START II ratification? Cadet Arnold responded that NATO enlargement was more important because NATO is the basis for U.S. security policy in Europe, and an expanded NATO would increase the potential for security dialogue between nations to prevent security problems. Furthermore, Cadet Arnold offered that the Russians would probably not follow through on their threat anyway, for they realize that NATO expansion is inevitable.

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Panel 7.

Regional Security (Asia)

Major Alan Van Tassel, Chair
Lieutenant Colonel Melvin Richmond
Major Philip Smith
Captain Robert Cummings, Jr.
Miss Sharon Richardson

1996 Research Conference

PANEL 7: REGIONAL SECURITY (Asia)

Chair: Maj Alan Van Tassel, INSS

Participants: Lt Col Melvin Richmond, Defense POW/MIA Office

Maj Philip Smith, Naval War College

Capt Robert Cummings, Jr., 34th Airlift Squadron, Japan

Ms. Sharon Richardson, Olin Foundation

PANEL PRESENTATIONS:

"U.S. National Interests in the Socialist Republic of Vietnam," Lt Col Melvin Richmond

Lt Col Richmond began his discussion by stating that a paradigm shift has occurred in Southeast Asia, where countries once known as unstable, poor, and plagued by conflict are emerging into global prominence. Perhaps the most dramatic shift is occurring in the Socialist Republic of Vietnam. The United States, which has to date predicated its post-war relations with Vietnam almost exclusively on accounting for more than 2,000 American prisoners of war (POWs) and Americans missing in action (MIAs), must consider shifting the basis of its relationship with Vietnam to include realistic national interests, not just post-war emotional issues.

It was suggested that achieving U.S. National Security objectives, to include promoting prosperity at home, enhancing U.S. security, and promoting democracy/values abroad, could be enhanced if the United States adopts relations with Vietnam based on realistic national interests. Specifically, improved relations with Vietnam would enhance U.S. security by promoting regional stability, assisting with the non-proliferation of weapons of mass destruction, and enhancing the security of U.S. allies in the region. The benefits of regional stability would result from preventing the emergence of a regional hegemon and managing the growth of regional military forces. In addition, other benefits could include protection of U.S. citizens abroad and enhancing cooperation on counter-narcotics missions.

Improved Vietnamese-American relations would also promote prosperity at home. Americans would gain access to new markets and raw materials, as well as benefit from secure sea lines of communication to Southeast Asia. Additionally, the United States would have the opportunity to promote free-market economies and human rights, and to promote general democratic principles.

Lt Col Richmond suggested several policy initiatives to improve Vietnamese-American relations. As regards regional security, it was offered that the United States should remain involved with Southeast Asian security fora, promote military transparencies, include Vietnam in regional military conferences, promote negotiated settlements to territorial disputes, and expand military-to-military contacts with Vietnam.

Other recommendations to promote prosperity at home and to promote democratic principles in Vietnam include: declaring Vietnam a "friendly nation"; declaring "transactions with Vietnam are in the U.S. national interest;" and continuing dialogue with Vietnam on improving human rights. Lt Col Richmond concluded by stating that the time has come for the United States to view Vietnam as a country with opportunity, not as a war.

"The Dragon's New Teeth: China's Future Unmanned Air and Space Forces," Maj Philip Smith

Maj Smith focused his research efforts on identifying the future direction for China's People's Liberation Army Air Force (PLAAF). The current PLAAF is numerically impressive and has the upper hand in terms of manned force levels and equipment. However, the PLAAF's aircraft are obsolete, personnel training is insufficient, and their doctrine outdated. As a result, Chinese manned airpower is inadequate for offensive operations and is only effective in a limited, defensive role.

Maj Smith suggested that China's offensive capabilities include its strategic, operational, and tactical missiles operated by the PLA, People's Liberation Army Navy (PLAN), and PLAAF. Recognizing the inadequacies of its forces, China regards missiles as the quickest, most efficient way to solve its short term air and space power needs. Strategic, operational, and tactical missiles have and will continue to represent Chinese offensive power. In addition, Maj Smith suggested that the Chinese also believe missiles will generate prestige and hard currency for the mainland.

The Chinese military will increasingly focus its efforts on unmanned air and space platforms for offensive operations. Examples of possible platforms include Space Force Multipliers, Strategic Nuclear Forces, and Theater and Naval Missile Forces. Maj Smith commented that China already has a strong, and possibly threatening, space program. His research demonstrated that China is enhancing that program through completing and upgrading modern launch facilities, designing and flying reliable launch vehicles, and preparing a variety of capable satellites to go to orbit. It is important to note these demonstrated space capabilities not only have civilian applications, but military as well.

China's nuclear program is also alive and well. According to Maj Smith, China has a substantial strategic nuclear weapons program, including road mobile ICBM forces, whose capability is accelerating rapidly. Additionally, it is expanding its cruise missile and theater ballistic missile forces, which may represent a shift away from manned aircraft.

In summary, Maj Smith stated that China is making strides in its power projection capabilities. Its expansion of theater ballistic and cruise missiles, as well as its space program advances, clearly indicate that Chinese air and space forces are strengthening rapidly. These emerging Chinese forces will likely become more threatening and provide greater challenges for both its neighbors and Western weapons systems.

"The Taiwan Independence Movement," Capt Robert Cummings

Capt Cummings began his discussion by stating that Taiwan is already an independent, sovereign nation with a clearly defined population, territory, political and economic system, and military. However, questions regarding if, how, and when Taiwan will become a part of a Greater China or officially declare its independence remain unanswered. Capt Cummings' research focused on addressing these questions, as they are of tremendous concern to U.S. policy makers.

There are two sides to the independence-unification debate. One side, represented by the ruling Kuomintang (KMT), believes the "Taiwanese Independence Movement" is nothing more than a political ploy by the Democratic Progressive Party (DPP) to build emotional resentment against the KMT. The DPP, on the other hand, is the primary representative of the independence movement and believes it is part of a general trend toward democratization, nationalism, and self-determination. In addition, the DPP views the KMT and other external ruling regimes as suppressing the Taiwanese people's rights to self-government, and believes the Taiwanese people are increasingly identifying themselves as "Taiwanese," not "Chinese."

Capt Cummings suggested that both sides of the debate present their own views on Taiwanese history, politics, and culture. In order to sort through these differences and better understand Taiwanese society, Capt Cummings undertook a unique method utilizing attitude surveys, interviewed the political and intellectual elite, and incorporated other research methods. The results of his study were surprising and led to the conclusion that the majority of Taiwanese are practical-minded and unlikely to support the independence movement. Taiwanese seem to favor peace, harmony, and stability in relationships, not tension. Capt Cummings offered that the lack of support for the independence movement may also result from the fear of an invasion from the Mainland. Despite this, the study did show the independence movement slowly gaining popularity and legitimacy. Nonetheless, Capt Cummings suggested that because the growth is slow, pro-independence Taiwanese citizens will likely remain the minority for quite some time.

The study further demonstrated that middle class and business leaders do not favor independence because they prefer stability in relationships. Their fear is that Taiwan would be ruined in a confrontation with the Mainland. However, these same citizens and business leaders do not accept reunification with an oppressive Communist regime either. Therefore it is possible that the middle class and business leaders would support independence at some future date, provided Taiwan could demonstrate sufficient military strength to declare independence.

As regards China, its position on Taiwan independence has not changed, according to Capt Cummings. It still considers Taiwan independence an internal matter of national sovereignty. In some respects, China has taken an increasingly tough stance on the

independence movement, and has elevated tensions by engaging in military exercises in close proximity to Taiwan. Capt Cummings suggested this increasingly tough stance may result from the increasing influence of the hard-line People's Liberation Army (PLA) in Chinese domestic politics.

In conclusion, Capt Cummings recommended the United States approach the issue of Taiwanese independence very carefully because it has economic ties with both Taiwan and China as well as interests in maintaining regional stability. The United States should allow both sides to work out the issue by themselves, while at the same time supporting the continuing democratic and economic growth in Taiwan without specifically supporting Taiwanese independence. In addition, the United States should encourage development of economic and other ties between China and Taiwan to help alleviate tensions.

"Korean Unification: Probable, but Not Predictable," Ms. Sharon Richardson

The research study conducted by Ms. Richardson addressed the attitudes and possible scenarios for unification of North and South Korea. Her study consisted of both interviews and literature searches to determine when and how Korean unification would occur. Specifically, numerous interviews were conducted with academicians, U.S. government officials, businessmen, as well as politicians and high-level government officials of South Korea. In addition, diplomats from Russia and North Korea were also interviewed.

Ms. Richardson began with a brief discussion of Korean history and current economic and political situations. The Korean peninsula remains divided after 43 years of peace, and remnants of the Cold War still exist, including the Demilitarized Zone (DMZ). North Korea's economy is literally imploding, as it is unable to service loans or even produce sufficient amounts of food to feed its people. The North Korean government is nearly bankrupt and in short supply of hard currency. In addition, North Korean trade is dismal, as it has few goods to sell and even fewer partners with whom to trade. In contrast, South Korea's economy is quite healthy. Its trade volume is good, it has numerous trade partners, and provides well for its people.

Politically, the differences between North and South Korea are striking. South Korea is a nation in good world standing, has a democratic government, and is a member of the United Nations. North Korea lacks world status, is communist, and is charged with numerous human rights violations. These political differences raise serious questions about how unification will occur.

Ms. Richardson conducted several interviews to gain insights into the opinions behind Korean unification. The interviews offered four scenarios, including: attack by the North on the South followed by the South's victory and political and economic domination by Seoul; a negotiated confederation consisting of one country, but two systems; an economic or political collapse of the North followed by absorption by the South; and no

unification. The results of the survey demonstrated that collapse of the North was the most likely scenario. Most interviewees thought an attack by the North or a negotiated unification highly unlikely. In addition, no one believed that North and South Korea would remain separated.

Another possibility that emerged from the study was a process whereby negotiations or an evolution toward unification would occur. Such a process would facilitate a "soft landing" approach and avoid any chaos resulting from collapse. Regardless, both North and South Koreans demonstrated a desire for unification, although North Koreans want it sooner than later. The research suggested that some South Koreans are afraid that the weak North Korean economy will exact great financial burdens on the South. South Koreans would rather postpone unification until the economy of the North is stronger.

Ms. Richardson's study also researched Korean perceptions of how Japan, Russia, and China would view Korean unification. Interestingly, the study demonstrated the belief that these countries were not in favor of unification, because a divided Korea allowed them to play the North against the South. In addition, a unified Korea would be more of a threat militarily and economically.

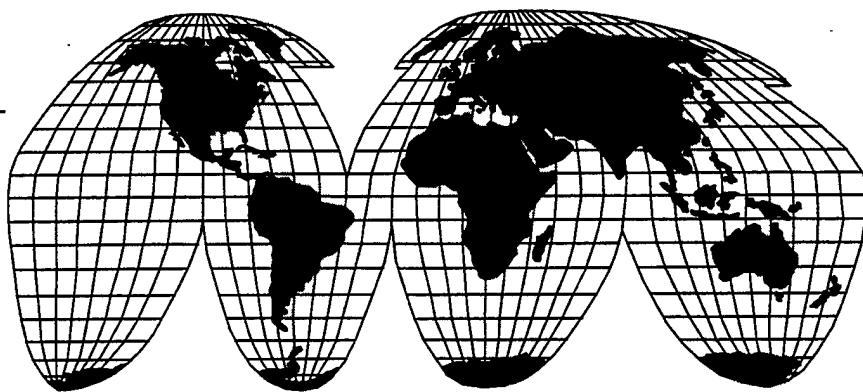
In summary, Ms. Richardson concluded that although both North and South Korea favor unification, the South would rather delay the process to save themselves a great financial burden. It was suggested that the United States should assume a leadership role, ease sanctions against the North, and act as an honest broker to ensure that the goal of Korean unification is achieved.

Panel Discussion

Discussion began with a question regarding Chinese GDP production. Maj Philip responded, China's GDP is increasing at a rate of 8.3 percent annually. A recent RAND study indicated, however, that current levels of Chinese economic growth will not sustain planned military improvements and acquisitions. The cost of maintaining Chinese forces is just too high to allow for significant modernization. It was suggested that by year 2010, China may have the world's largest economy, but also the world's largest population. The only way China can adequately invest in its military, and non-military, infrastructures is to become more of a free-market economy.

Another participant asked whether the United States was the best country to manage Korean unification. Ms. Simpson responded that managing a "soft landing" approach to Korean unification presents more of a challenge economically than politically. Although other countries can and should help, the United States is in the best position to maintain a leadership role in the region.

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Panel 8.

Regional Security (Middle East)

Colonel Joseph Burke, Chair
Lieutenant Colonel Terry Jones
Captain John Capello
Captain Tony DelGenis

1996 Research Conference

PANEL 8: REGIONAL SECURITY (Middle East)

Chair: Col Joseph Burke, USAFA Director of Education

Participants: Capt John Capello, USAFA Department of Political Science

Lt Col Terry Jones, 652 Combat Support Squadron, McClellan AFB

Capt Tony DelGenis, USAFA Department of Political Science

PANEL PRESENTATIONS:

"The United States, Iran, and the Persian Gulf," Capt John Capello

Capt Capello examined the threat Iranian ambitions and intentions pose to American interests in the Persian Gulf and attempted to determine how U.S. security policy might best address that threat. Throughout the course of the research project Capt Capello encountered significant difficulty in determining the exact nature of Iranian ambitions and intentions. This is due in no small part to the lack of reliable information regarding Iranian ambitions and intentions, as well as to the contradictory nature of the official statements that are available. Despite this difficulty, Capt Capello was able to develop several conclusions with regard to Iran and related U.S. policy.

Capt Capello found that Iranian ambitions and intentions in the Gulf are founded on Tehran's definitive perspective of the Iranian position in the region. The Iranian perspective of the surrounding area is formed largely by a view that Iran is the most important state in the region. They see their size, cultural prestige, history and uniqueness as granting them the power to be the dominant force in the region. This idea of distinctiveness also contributes to a feeling of isolation, of being surrounded by hostile states. This has been compounded historically by foreign conquests, and in the modern era by a series of colonial or semi-colonial experiences. Thus Iran's view of itself and the region, according to Capt Capello involves both a claim to leadership and a fear of external domination.

Capt Capello continued that U.S. efforts with regard to Iran are limited by a lack of informed knowledge about the Iranian governments true intentions in the Persian Gulf. This is in part due to a lack of sufficient human intelligence as well as by a general lack of basic, low-level interactions. The lack of specific knowledge subjects U.S. policy to a high degree of political influence. There are two opposing camps of thought regarding Iran and its potential threat to U.S. security interests within the United States. The negative camp sees Iran as a threat to U.S. interests and allies while the positive camp sees the U.S.-Iranian relationship as an unfortunate result of misperceptions, but one that needs to be improved before a violent conflict results from misunderstandings.

Current U.S. policy in the region, specifically toward Iran and Iraq is based on the concept of Dual Containment. The initial objective of the policy with regard to Iran was to modify behavior, specifically to discourage Iran's support for terrorism and pursuit of

nuclear weapons technology. During 1994, when Dual Containment was first announced, there was no criticism of trade or dialogue with Iran, nor was there any talk of changing the regime in Iran. Capt Capello noted that this has changed drastically in the past two years. He pointed to the emergence of a full embargo on U.S.-Iranian trade; a CIA campaign to change the government in Iran; and the "D'Amato Bill," imposing sanctions on individuals or states making investments in Iran as evidence of the changing policy.

The underlying question for Capt Capello was to determine if current U.S. policy towards Iran is strategically appropriate. He concluded that because the policy was expanded beyond its original goal of changing the behavior of Iran, in its current form it is perpetuating conflict rather than alleviating it. He suggested that if the situation persists tension levels will escalate and the United States should prepare for the worst. He concluded by suggesting that U.S. security interests in the region would be better served by fostering relations with Iran, suggesting in particular engaging the Iranians in dialogue on common security interests in the Gulf. Improving relations would bring Iran back into the fold and put pressure on them to meet expectations.

"Defense Cooperation in the Persian Gulf," Lt Col Terry Jones

Col Jones opened by stating that the U.S. policy of Dual Containment in the Persian Gulf has made the United States the direct guarantor of stability in the region. The objective of the policy is to reduce the chances that an aggressor state, specifically Iran and Iraq, will emerge who is able to threaten U.S. vital interests or allies in the region. Implementation of this policy has resulted in U.S. support of the Gulf Cooperation Council (GCC) collective defense and security cooperation efforts. In addition, the United States has also helped individual states meet their defense requirements. He noted that the key to successful implementation of this strategy is continuing defense cooperation between the United States and Arab allies as well as amongst the Arab allies. Both of which are currently being jeopardized.

Col Jones cited several factors which are challenging GCC cooperation. The foremost of which is divergent threat perceptions; the northern Gulf states generally view Iraq as the primary threat, while the southern Gulf states view Iran as the predominant threat. Political rivalries within the Council are also presenting challenges to cooperation. He noted that the region's economic imbalances encourage as well as discourage cooperation; with the poorer states wanting to benefit from the defense programs of the wealthier states, however those states are reluctant to carry the economic burden of defending weaker neighbors. Further, the demographics of the region, the small, male dominated populations with large expatriate communities make it difficult to raise and maintain military forces. Finally, he suggested that equipment and doctrinal interoperability also present significant challenges to GCC cooperation.

U.S.-Arab defense cooperation is being hindered, primarily by political stability problems within the Gulf states. This instability, compounded by a general lack of

succession polices enhances the likelihood, and thus the fear within the United States, that today's ally might be tomorrow's enemy. Further, a growing anti-Western sentiment within the Islamic populations of the region and an increasing resentment for U.S. military presence are inhibiting Arab relations with the United States. Arab social discontent and civil unrest, as well as economic factors and questions over the U.S. commitment to the region are also hampering cooperation.

To overcome these challenges and to ensure continued peace in the region, Col Jones suggested that the United States should embark on a strategy to improve GCC defense cooperation. Specifically he recommended encouraging the development of an integratable inter-operable C2 system for air and sea surveillance. Moreover, he also suggested the United States should encourage a continuation of political reforms to reduce the threat of political and civil unrest in the region. He stated that the United States will continually need to diversify its presence in the region, including increasing reliance on Airpower Expeditionary Force deployments. Finally, he suggested the United States will need to plan for a strategy beyond Dual Containment in anticipation of changes in the Arab-allies threat perceptions as well as eventual and unpredictable changes in the leadership both in Iraq and Iran.

"The Feasibility of U.S. Joint Service Ballistic Missile Defense and an Examination of U.S.-Israeli Ballistic Missile Defense Initiatives," Capt Tony DelGenis

Capt DelGenis focused his presentation on the joint U.S.-Israeli missile defense initiative. He began by noting that in the beginning of the 1990's, Israel perceived its danger from outside military forces to be substantially less than during the prior decade. The Gulf War, in particular the Iraqi SCUD attacks, demonstrated the invalidity of this statement, as well as Israel's vulnerability to crude missile technology. The threat is perceived to emanate not only from Iraq but also from Iran and Syria. Although the United States assisted Israeli defense against Iraqi attacks with deployments of Patriot missile batteries, Israel was unimpressed with Patriot performance due in part to intercepted missile fallout. As a result of their experience during the Gulf War and the dissatisfaction with the Patriot system, Israel began development of the ARROW Anti-Ballistic Missile. The ARROW is faster than the Patriot, which results in reduced fallout by intercepting the missile at a much farther distance from the target. The program has entered its second phase of development and the process is on-going.

Washington is continuing to help Israel address their growing ballistic missile threat by providing financial and technical assistance to their missile defense program. U.S. financing of this program is a contentious issue within Washington. While it is symbolic of the strong ties the United States shares with Israel, many believe that is where the utility of the program ends. The Department of Defense has indicated that it has no interest in the system and has no plans to purchase it. Despite this, the United States funded 80 percent of Phase I development and has committed to funding 40 percent of the deployment costs.

Capt DelGenis noted that in addition to partial funding of the ARROW system, the U.S. government is involved in several other joint Ballistic Missile Defense (BMD) initiatives with Israel. These programs include boost-phase intercept systems, Nautilus high energy laser gun, and the Israeli Test Bed (ITB) a missile defense system used to test Israeli defense measures against theater missile threats. The funding of these projects could become increasingly controversial within the United States as competition amongst the numerous Service missile defense projects becomes increasingly intense. Proponents of U.S. support for the Israeli projects argue that the information and technology developed in these projects can be applied to U.S. BMD efforts, including the Theater High Altitude Area Defense (THAAD) project. It has also been suggested that proceeding in this joint manner will allow the Israelis to experiment with the systems and technologies, which will highlight the deficiencies and mistakes. Capt DelGenis suggested, this alone could save the United States effort and funding in the development of their own defenses.

Capt DelGenis concluded that Israeli BMD efforts have made significant strides in the recent past, however the threat has also expanded significantly. He noted that Israeli system development is dependent upon U.S. technology and resources and that U.S. assistance is highly symbolic of U.S. commitment to Israel. Finally, he noted that the potential for unlimited future U.S. expenditures could significantly threaten U.S. support of the project.

Panel Discussion

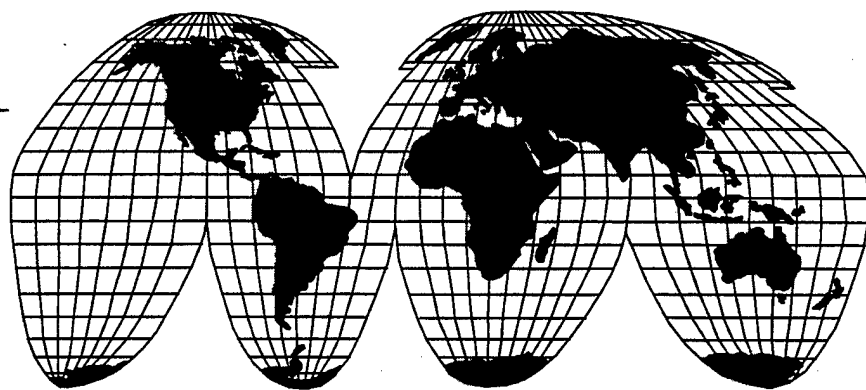
Noting Capt Capello's comments on the inefficiency of the Dual Containment strategy, participants questioned what strategy would be appropriate for the region. Capt Capello suggested that it is not the policy that is ineffective, rather it is the current implementation strategy. The United States should return to the basic strategy and principles. He recommended that the United States begin to foster mutual trust on lower level issues, through lower level contacts.

Participants wondered whether U.S. military efforts in the region were playing too great a role and as a result creating a situation where cooperation amongst the countries of the GCC is not necessary. In particular, participants noted that many of the GCC countries view their real role as maintaining internal defense rather than on fostering cooperative defense since the United States has always been the lead in that area. Another participant wondered if the United States would be able to conciliate its presence in the region to the resentment which is growing within a great number of the regimes it currently supports. Col Jones noted that the answer to this question is country contingent.

Participants questioned Capt DelGenis on the benefits of U.S. investment in Israeli BMD programs. He responded that in addition to the reasons already stated, the United States is also deriving large political benefits. Often times, political compensation is just as important to the United States as defense and military compensation are. It was also asked if there was any connection between THAAD success and that of the Israeli ARROW, to which Capt DelGenis responded that there was none. It was also noted that

neither the U.S. nor the Israeli programs address the threat presented by cruise missiles, suggesting that this absence was a significant "blind spot" in the programs. Several participants countered that awareness to this deficiency is heightening and that the J-8 is beginning to take steps to address the problem.

In discussing the role of BMD as a strategic weapons, the question arose whether the missile threat was based more on nuclear warheads or chemical weapons agents. Capt DelGenis responded that for the Israelis there is no real distinction, either one is just as bad.



Keynote Address

1996 Research Conference

KEYNOTE ADDRESS

On the evening of Thursday, 7 November 1996, the Institute for National Security Studies (INSS) hosted a banquet for all Conference participants. Following an introduction by Lt Col Peter Hays, Director of INSS, Lt Gen Ervin Rokke, President of the National Defense University, addressed the participants. His remarks follow:

Good evening. I am truly delighted to join you tonight. I'm also grateful for the splendid hospitality shown by Col Hays and Capt Jodoin.

I'm less certain about the attitude of my friend and former permanent professor colleague, Brig Gen Randy Cubero. When I asked him for guidance about how to deal with this august group, his response cut right to the heart, so to speak. "Your role," he said, will be like that of a corpse at an Irish wake. It's important that you be here, but not much is expected from you."

I was equally taken aback by a comment from a former Superintendent whom I encountered at the airport this afternoon. "You're Rokke, are you not?" he mumbled. "Yes sir," I responded, "I worked for you as Dean of Faculty." "And quite a Dean you were," he retorted. "I wish we'd had two like you, instead of four."

Actually, I enjoyed my time here as Dean of Faculty. My relationship with the Director of Athletics, the late John Clune, was particularly rewarding. I'm the only Dean who could claim that Air Force never lost to Notre Dame during my tenure. John Clune used to say, of course, that this had more to do with the length of my tenure and a coach named Faust, than my contributions to the football team. Be that as it may, it does seem to have taken General Cubero quite some time to get the team back on track.

Actually, this conference brings to mind a similar proceeding for which I was an action officer during the late 60's or early 70's. The conference was conceived by several faculty members with intelligence backgrounds to provide an outlet for bright young Lieutenants and Captains to present papers on whatever intelligence-related topics turned them on. Since the conference sessions were closed, there was no requirement for the papers to be cleared, though we did ask that they be provided in advance for distribution to all conferees.

As you might expect, those papers left no ox "ungored" and what rapidly became known as the "Young Turks Conference" gained notoriety even before it began. So much so, in fact, that a very senior Air Force Intelligence officer invited himself to give the opening address. If I could summarize his speech in a sentence, it was, "Wisdom comes only with age and the price for stupidity at this conference will be very high!" I don't have to tell you that lots of papers were quickly revised and several of the "Young Turks" came down with food poisoning even before the first lunch was served. The conference itself took on the aura of the Irish Wake I mentioned earlier.

And so it is that I have decided to take a somewhat different tack tonight from that earlier Air Force intelligence person. Indeed, the central thrust of my remarks will be precisely the opposite of his. To develop my thesis, please allow me a few minutes to reminisce about how we have matured as an Air Force. I've been lucky enough to watch some of it firsthand.

My recollection starts in the late summer of 1958 when I found myself marching up the hill with my doolie classmates to a brand new Air Force Academy. Within days, we had begun our academic classes and I was fascinated with what my poli sci and history instructors had to offer. The Cold War, of course, made it a cinch to separate the good guys from the bad in international politics.

Warfare, we were taught, was intensely rational. Indeed, some chap had given us equations which allowed one to quantify capabilities on both sides and determine with impressive precision who would win. Our nation's strategic doctrine of massive retaliation emphasized nuclear weaponry, which was easy to count, and nuclear strategists emerged in such unlikely places as Harvard and Columbia. Henry Kissinger wrote a book entitled Nuclear Weapons and Foreign Policy in which he suggested that tactical nuclear weapons were not essentially different from large conventional weapons. Perhaps they could be used effectively in combat situations.

All of this was good for the United States Air Force, of course, particularly Strategic Air Command. No rational opponent would take military action against such a stalwart force. The only doubt in my mind came when I read a newly published book, The Uncertain Trumpet, by Army General Maxwell Taylor. The oral book report I gave in my Air Force Academy Political Science class was not well received. After all, Taylor poked at the notion that strategic weaponry alone was sufficient for our defense needs.

In any event, the Cuban Missile Crisis seemed to confirm that the most important game in town was nuclear. Khrushchev had tried to improve his strategic equation on the cheap and backed down--as would any rational opponent--in the face of our strategic might. In short, like the television we watched, issues seemed black and white as we moved into the decade of the 1960's. There was no doubt in my mind who the real enemy was, and we had him trumped with our impressive strategic nuclear resources. Then came Vietnam.

For starters, it wasn't supposed to happen, and once it did, few of the notions I studied at Colorado Springs or, for that matter, as a graduate student at Harvard seemed to work. To be sure, we in the Air Force were doing our thing quite effectively. Our sortie rates were high, we dropped lots of tonnage, we destroyed bridges, factories and power plants, but the war continued. At the very top levels of the Department of Defense, our well-manicured policy of gradual escalation showed textbook rationality. But in the end, the last chapter came out badly. Any way you cut it, the decade of the '60's was not good for any of the services, including the United States Air Force.

As I recall, we spent most of the '70's licking our wounds. I found myself back at the Air Force Academy, this time as a professor. The clarity of my earlier student days was gone. Vietnam had upset the intellectual framework, and the pain was still too great to sort out a new one. I don't remember that we celebrated Air Force birthdays in those days. In fact, cadets on passes tended to shed their uniforms at the Academy gate, some even bought wigs to cover their short haircuts. But even bad tales must come to an end, and the '80's brought real changes for those of us in uniform.

The dire predictions that an all-volunteer force would attract only society's most unfortunate turned out to be wrong. A "new military" was emerging and all services, including the Air Force, began celebrating their heritages with more gusto. As the Air Attache in London, I watched with fascination as a makeshift flotilla of British ships and about 30 Harrier aircraft successfully used innovation and agility to overcome mass in the Falklands. Maybe our military cultures were capable of learning and adapting, even without losing a war.

In 1986, Goldwater-Nichols legislation put into law what had already become increasingly apparent in practice: military services, including the Air Force, would no longer fight alone. The Air Force challenge now became to organize, train, and equip. And finally, as the Defense Attache in Moscow from 1987 to 1989, I watched an increasingly cumbersome economic and political system struggling to remain alive, to say nothing of remaining militarily competitive, with the West.

After his first trip to the United States, the kindly old Soviet warrior, Marshal Akhromeyev, told me that American NCO's and junior officers were incredibly good--even better than their Soviet counterparts. "But ours will be as good as yours after Perestroika," he promised. That, of course, is not how things turned out.

To make a long story short, we find ourselves in the last decade of the 20th Century with a new world politically and with enormous changes underway in the technology, information and ecology areas. Let me now turn to some implications of this newly emerging world.

Last month I attended the annual "Fall Corona" session here at the Academy--a three-day series of meetings during which our Chief led the three and four-stars through a very sophisticated look into the future. From each of the decades I have described, the "lessons learned" were readily apparent. The late '50's and early '60's illusions about our capability to assess the present and the future with precision were gone. We talked a lot about "uncertainty" and acknowledged that projecting the future is closer to a "floating craps game" than an exact science.

The emphases on mass and on linearity that we carried into Vietnam were similarly absent. No longer are we simply counting our airplanes, bombs, and missiles and, after comparing the tally with potential opponents, making precise assertions about a "military balance." In assessing our force structure requirements for the future, the Chief focused

our attention on notions of "agility" and capability for functioning in a rapidly changing, "organic environment." He forced us to look closely at whether our organizational structure and doctrine are capable of dealing with surprise, both on the battlefield and in the more cosmic arena of international relations. In short, the Chief laid out a series of challenges which go to the very heart of our Air Force culture and perspectives. And, to be quite candid about it, virtually every three and four star in his audience will be civilians long before those challenges are met.

The important question, then, is whether future generations of leaders are up to the task. That, of course, includes you. Some of you are muttering under your breath, "Thanks a lot." Others are probably wondering whether I have any pearls of wisdom to offer. Let me conclude with a few: First, be skeptical about what you hear from folks like me--products of an intellectual age during which the Cold War made security issues appear to be clear-cut, and during which we worshipped at the altar of pure reason, Newtonian style.

The world probably was never so black and white as we thought, nor was it so linear. As a young photo interpreter during the Vietnam war, I was superb at answering the question of whether the Thanh Hoa bridge was up or down, but I never asked why we spent something like six years and a half dozen aircrews trying to bomb it in the first place. Within days of the bridge's destruction, the enemy had constructed a pontoon crossing just up the river which was more than adequate for their purpose--they weren't, after all, moving large equipment. I hope we didn't spend all that effort simply because bridges were important to our opponents in World War II.

As the Defense Attache in Moscow from 1987 to 1989, I sent lots of reports back to Washington about tanks, ships, planes and other things, but never once suggested that the Communist house of cards was about to crumble. My wife, incidentally, who worried about getting milk from Helsinki and meat from her friends in the Argentine Embassy used to exclaim in disgust, "I can't believe I've been afraid of this bunch all my life!"

She had it right. I had it wrong. She focused on Communism as a process and found it bankrupt. I focused on things: on ships, planes, and tanks and missed the cancerous process eating away at the Soviet Union. In my reports, I was very rational and linear. I remained "in the box," so to speak. My wife got it right because she put more faith in her instincts and less in the need to uphold conventional wisdom.

Second, be skeptical of traditional academic disciplines, particularly the boundaries between them. The hard reality is that the national security arena has become more complex than our traditional academic disciplinary boundaries. The days when one might tie a bow around a few courses in political science, history, and economics and call that professional military education are gone. Today's complex world may not be comprehensible from any perspective, but most certainly it cannot be understood without a dose of basic science and engineering notions as well as the social sciences and humanities. The best analysis I have encountered about responding to unconventional attacks, be they

from chemicals, bacteria, or information, was based on the workings of the human immune system. Indeed, the so-called "New Sciences" may offer the only effective analytic approach to modern battlefields and, for that matter, strategic planning.

Finally, beware of traditional notions concerning the essence of your respective services. For several years, I passed each day under a placard that read, "The mission of the Air Force is to fly and fight and don't you forget it." That was 25 years ago and, at that time, something like three-quarters of the Air Force officer corps was rated. Today, I'm told that only 19 percent of Air Force officers are pilots. Flight remains central to our profession, but it has been joined by new and perhaps equally important functions. You need to figure out whether this has changed our culture and, if so, how.

Are there now a new assortment of core competencies essential to airmen as well as soldiers, sailors and marines and do they reflect core values from which our services can find inspiration and guidance during increasingly uncertain times? I'm not sure where all this leads, but if you'll permit a bit of heresy, I'd like to read the last paragraph from a draft command and control doctrine manual put together by the Marines.

Marine quote:

The MEF commander sipped his coffee and gazed at the large situation screen.

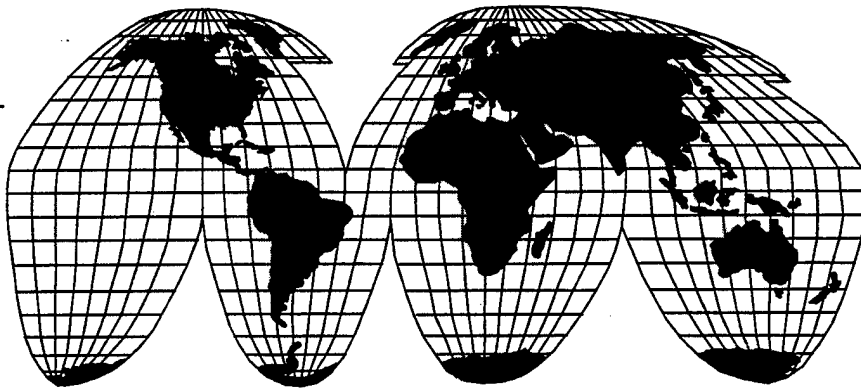
"Well, what do you think, Dick?" he asked.

"What do you think?" Westerby said. "I think we went in with an unclear picture of the situation, and it only got worse. I think the enemy showed up where we least expected him and caught us with our shorts down. I think our planes were stuck on the ground and our vehicles were bogged down in the mud. I think our comm went to hell, and you were *incommunicado* for 6 hours at a time. I think all our best-laid plans went down the tubes, and we had to improvise and turn the whole thing over to the junior commanders. If not for a Cobra pilot with a good pair of eyes and a company commander with a penchant for ignoring his orders...."

"Yes," the general said with obvious satisfaction, "don't you love it when the system works to perfection?"

That, in a nutshell, is the point I've been trying to make tonight. Thanks again for inviting me.

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Agenda

1996 Research Conference

**USAF INSTITUTE for NATIONAL SECURITY STUDIES
UNITED STATES AIR FORCE ACADEMY**

**4th ANNUAL RESEARCH RESULTS CONFERENCE
7-8 November 1996**

--AGENDA--

THURSDAY, 7 NOVEMBER

Fairchild Hall, Lecture Hall H-1 and Lectinar L-1 (third floor)

0800 Buses depart hotel for Fairchild Hall

0830-0900 Registration and refreshments

0900-0935(H-1) Opening Session

Welcome by: Brig Gen Randy Cubero (USAF/DF)
Col Todd Bodenhamer (HQ AF/XOXI)
Lt Col Pete Hays (USAF INSS)

0935-0945 Break

0945-1115(H-1) *Panel 1: ARMS CONTROL AND PROLIFERATION*

Chair Lt Col Alex Ivanchishin, Treaty and Agreements Branch, XOXI

Lt Col Jeffrey A. Larsen, Senior Research Fellow, INSS

--The Development of an Agreed NATO Policy on Nonproliferation

Col Guy B. Roberts, Staff Judge Advocate, 2nd Marine Division, Camp Lejeune

--NATO's Response to the Proliferation of Weapons of Mass Destruction

Col Kurt J. Klingenburger, Kunsan AB, Korea

--Sustaining Alliance Air Operations in an NBC Environment

Capt Richard Dabrowski, Special Operations School, Hurlburt Field

--Russian-American Cooperation in WMD Counterproliferation

1130 Buses depart for USAFA Officers Club

1145-1245 Lunch at Officers Club

1245 Buses return to Fairchild Hall

1300-1405(L-1)

Panel 2: CONFLICT IN THE INFORMATION AGE I

Chair Maj Greg Rattray, Fletcher School of Law and Diplomacy
--Assessing Adversaries Information Warfare Objectives and Capabilities
LT Donald Elam, Department Head School
--Attacking the Infrastructure: Exploring Potential Uses of Offensive IW
Maj Mike Muzzerall, Air Command and Staff College
--Military Responses to IW Violations of US National Security
Capt Roger Thrasher, Rome Laboratory
--IW: Implications for Forging the Tools

1405-1415 Break

1415-1520(L-1)

Panel 3: CONFLICT IN THE INFORMATION AGE II

Chair Lt Col Jim Rodgers, Future Concepts Branch, XOXI

Maj Bob Yahn, 1st Reconnaissance Squadron, Beale AFB
--The Information Web: A Vulnerability Assessment
Maj Greg White, USAFA Department of Computer Science
--IW Units: Structure, Composition, and Mission
Capt Patrick Barker, USAFA Department of History
--Avoiding Technologically-Induced Delusions of Grandeur

1520-1530 Break

1530-1700(L-1)

Panel 4: AIR FORCE PLANNING ISSUES

Chair Lt Col David G. Estep, USAF National Defense Fellow, INSS

Maj Richard L. Fullerton, USAFA Department of Economics and Geography
--Using Auctions to Reward Research Tournament Winners
Dr. Peter M. Taylor, USAFA Department of Economics and Geography
--National Defense Strategy vs the Budget: The Post Cold-War Battle
Capt Craig R. Corey, Ramstein, Germany
--The Goldwater-Nichols Act of 1986 and its Effects on the US Air Force
Maj Richard D. Simpson, USAFA Department of Political Science
--Intervening in Chaos: A Call for New Doctrine

1700 Buses depart for hotel

1830 Buses depart hotel for New South Wales Restaurant

1845-1930 No-host reception at New South Wales Restaurant

1930-2100 Dinner and Speaker
Speaker: Lt Gen Ervin J. Rokke, President, National Defense University

2100 Buses return to hotel

FRIDAY, 8 NOVEMBER

Fairchild Hall, Lectinars L-5 and L-1 (third floor)

0800 Buses depart hotel for Fairchild Hall

0815-0845 Refreshments

0845-1015(L-5) *Panel 5: ENVIRONMENTAL SECURITY*

Chair Mr. Bob Jarrett, Army Environmental Policy Institute

Maj Russell Defusco and Lt Col Brian Cullis, USAFA Dept. of Biol. and Dept. of Econ. & Geog.
--Using Geographic Information Systems to Model Bird Distributions and Populations on
a Continental Scale

Dr. James M. Smith, USAFA Military Arts and Sciences
--Environmental Federalism and US Military Installations

Capt Laura M. Antalik and Dr. Samuel T. Ariaratnam, USAFA/CE & Univ. of Alberta, Edmonton
--Environmental Security and Infrastructure in Poland

1015-1030 Break

1030-1200(L-5) *Panel 6: REGIONAL SECURITY (Europe)*

Chair Maj Mary Beth Ulrich, USAFA Department of Political Science

Cadet First Class Jason Arnold, USAFA Cadet Squadron 34
--NATO Enlargement: Issues and Answers

Dr. Charles Krupnick, USAFA Military Arts and Science
--The Emerging OSCE Role in Europe's Security Architecture

Capt Stephen P. Lambert and Capt David Miller, Naval Postgraduate School
--US Nuclear Weapons in Europe: Current Environment and Prospects for the Future

Capt Steven R. Drago, USAFA Military Arts and Sciences
--Three Reasons Why the United States Still Needs NATO

1210-1300 Lunch on Staff Tower, Mitchell Hall (cadet dining facility)

1315-1445(L-5)

Panel 7: REGIONAL SECURITY (Asia)

Chair Maj Alan Van Tassel, INSS

Lt Col Melvin E. Richmond, Defense POW/MIA Office

--US National Interests in the Socialist Republic of Vietnam

Maj Philip A. Smith, Naval War College

--The Dragon's New Teeth: China's Future Unmanned Air and Space Forces

Capt Robert L. Cummings Jr., 34th Airlift Squadron, Japan

--The Taiwan Independence Movement

Ms. Sharon Richardson, Olin Foundation

--Korean Unification: Probable, but Not Predictable

1315-1445(L-1)

Panel 8: REGIONAL SECURITY (Middle East)

Chair Col Joseph G. Burke, USAFA Director of Education

Capt John Capello, USAFA Department of Political Science

--The United States, Iran, and the Persian Gulf

Lt Col Terry Jones, 652 Combat Logistics Support Squadron, McClellan AFB

--Defense Cooperation in the Persian Gulf

Capt Tony Del Genis, USAFA Department of Political Science

--The Feasibility of US Joint Service Ballistic Missile Defense and an Examination of US-Israeli Ballistic Missile Defense Initiatives

1445-1500

Break

1500-1515(L-5) **Concluding Comments**

Lt Col Pete Hays, INSS

Col Todd Bodenhamer, XOXI

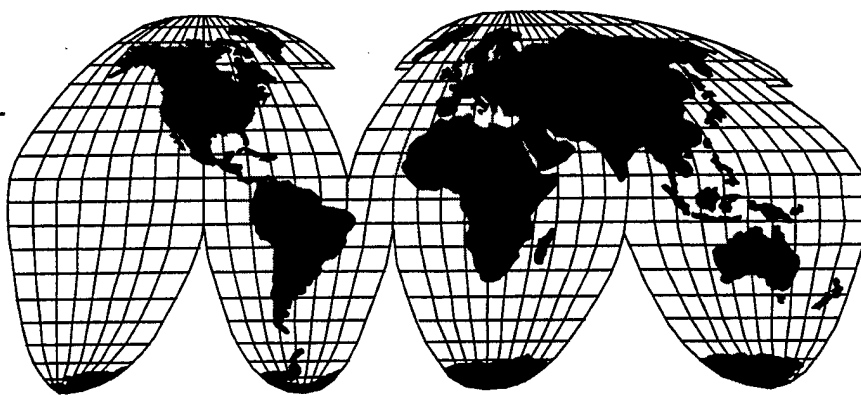
1515-1530(L-5) Presentations by the Airpower Journal

1530

Conference concludes

Buses return to hotel

(current as of 31 Oct 96).



List of Participants

1996 Research Conference

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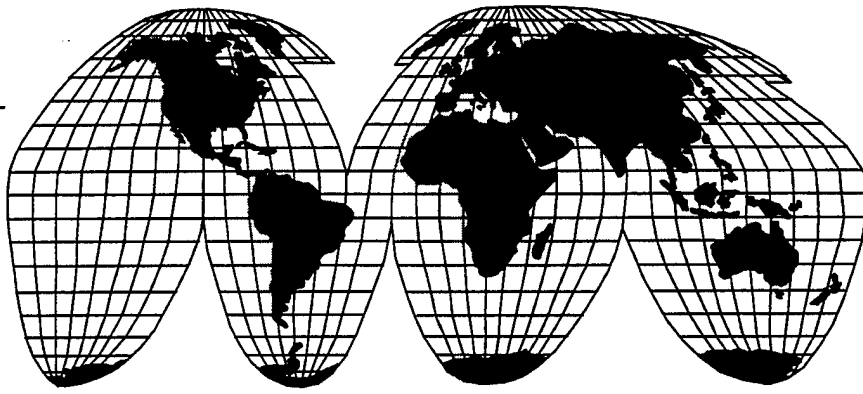
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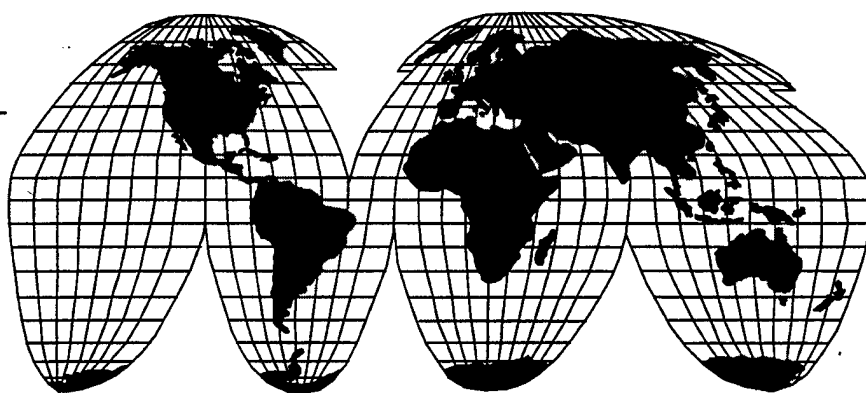
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Administrative Materials

1996 Research Conference



Letters of Invitation

1996 Research Conference



DEPARTMENT OF THE AIR FORCE
USAF INSTITUTE FOR NATIONAL SECURITY STUDIES
USAF ACADEMY, COLORADO



4 October 1996

«HONORIFIC» «FIRSTNAME» «LASTNAME»
«TITLE»
«COMPANY»
«ADDRESS»

Dear «HONORIFIC» «LASTNAME»,

On behalf of the US Air Force Academy, the Air Force National Security Negotiations Division, and the USAF Institute for National Security Studies (INSS), I would like to invite you or a representative of your organization to attend a two-day conference in Colorado Springs on 7 and 8 November 1996. This conference will highlight significant accomplishments of a number of researchers sponsored by INSS during FY96. We plan to organize this conference using an academic format, with several topical panels each day. The proceedings will begin at 0830 on Thursday, 7 November. More details can be found in the attached registration form and tentative agenda.

A hosted dinner is also scheduled for Thursday evening featuring a keynote speaker associated with the national policy making community. We anticipate that approximately 75-100 participants from government and private organizations will attend. Two lunches and the conference dinner will be provided by INSS through your conference registration fee.

We very much look forward to your participation in our fourth annual research conference at the Academy in November. Please respond by returning the attached registration form and your check by 28 October. Thank you.

Sincerely,

PETER L. HAYS, Lt Colonel, USAF
Director, Institute for National Security Studies

2 Atch

1. Registration Form
2. Tentative Agenda



DEPARTMENT OF THE AIR FORCE
USAF INSTITUTE FOR NATIONAL SECURITY STUDIES
USAF ACADEMY, COLORADO



4 October 1996

«HONORIFIC» «FIRSTNAME» «LASTNAME»
«TITLE»
«COMPANY»
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We anticipate that approximately 75-100 participants from government and private organizations will attend. We have reserved 40 rooms in the Radisson Hotel beginning Wednesday, 6 November for three nights. The hotel is located on 8110 North Academy Blvd, outside the south gate of the Academy. To reserve your room please contact the Radisson by 28 October 1996 at 719-598-5770. Arrivals after 1800 will need to be secured with a credit card. The cost of the rooms is the government rate of \$51.00 per person, per night.

The conference will take place in Building 2354, Fairchild Hall, Lectinar L-1 (3rd floor). Parking at Fairchild Hall will be very limited. Accordingly, transportation will be provided from the Radisson each morning to transport all conference participants to the conference facility. We will also transport participants to and from the banquet on Thursday evening.

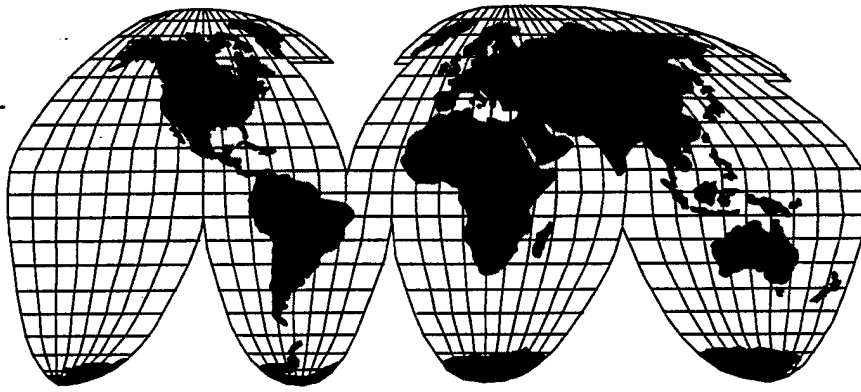
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Sincerely,

PETER L. HAYS, Lt Colonel, USAF
Director, Institute for National Security Studies

2 Atch

1. Registration Form
2. Tentative Agenda



Registration Forms

1996 Research Conference

INSS "1996 RESEARCH RESULTS CONFERENCE"
REGISTRATION FORM
(Local Area)

Please respond no later than 28 October to:

Stephanie Bower
SAIC
1710 Goodridge Drive, MS 1-7-8
McLean, Virginia 22102

Conference location and time:

Thursday, 7 November 1996, 0830-2130
Bldg 2354, Fairchild Hall, Room L-1 (3rd floor)
Lunch USAFA Officer's Club
Dinner at the New South Wales Restaurant, 1845-2130

Friday, 8 November 1996, 0815-1530
Bldg 2354, Fairchild Hall, Room L-1 (3rd floor)
Lunch with cadets. Mitchell Hall

All inclusive Conference Fee: \$ 45.00
(includes lunch Thursday and Friday, dinner on Thursday, and miscellaneous expenses)

Basic Registration Fee: \$ 15.00 (no meals)

Add additional charges for meals:

\$ 7.00	Lunch - Thursday
\$ 21.00	Dinner - Thursday
\$ 2.00	Lunch - Friday

**NOTE: CONFERENCE FEES ARE REIMBURSABLE BY SUBMITTING SF 1164 TO DFSB.
YOU WILL RECEIVE A RECEIPT AT THE CONFERENCE**

Call with questions: Comm 703/827-4981
Comm FAX 703/556-7168

(return the portion below with your check for the applicable amount payable to "INSS Conference Fund")

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Address: _____

Telephone (Comm and DSN) _____

Fax (Comm and DSN) _____

E-Mail Address _____

Meals will attend: Thursday Lunch Thursday Banquet Friday Lunch

INSS "1996 RESEARCH RESULTS CONFERENCE"
REGISTRATION FORM
(Out of Town)

Please respond no later than 28 October to:

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Conference location and time:

Thursday, 7 November 1996, 0830-2130
Bldg 2354, Fairchild Hall, Room L-1 (3rd floor)
Lunch at USAFA Officer's Club
Dinner at the New South Wales Restaurant, 1845-2130

Friday, 8 November 1996, 0815-1530
Bldg 2354, Fairchild Hall, Room L-1 (3rd floor)
Lunch with cadets, Mitchell Hall

Conference Fee: \$ 50.00

(includes lunch Thursday and Friday, dinner on Thursday, and miscellaneous expenses)

NOTE: CONFERENCE FEES ARE REIMBURSABLE TRAVEL EXPENSES.
YOU WILL RECEIVE A RECEIPT AT THE CONFERENCE

Call with questions: Comm 703/827-4981
Comm FAX 703/556-7168

(return the portion below with your check for \$ 50.00 payable to "INSS Conference Fund")

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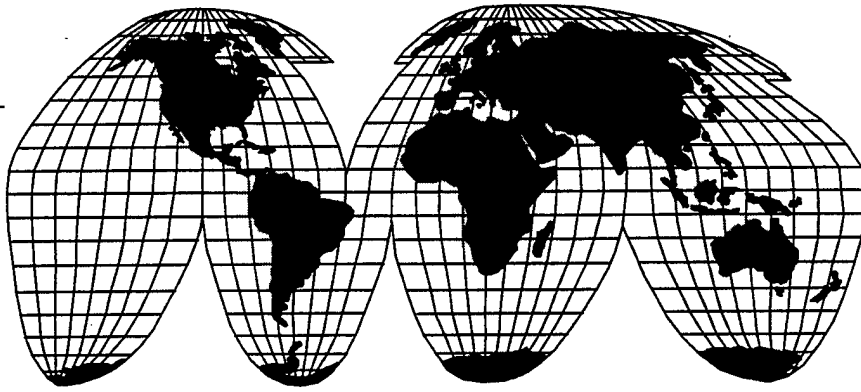
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Fax (Comm and DSN) _____

E-Mail _____

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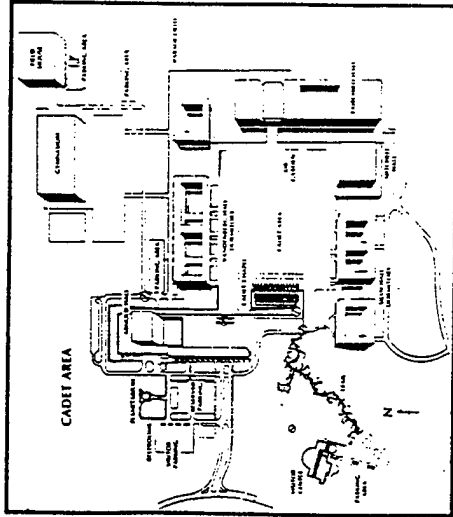
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Conference Maps

1996 Research Conference

Welcome to your United States



SPECIAL INSTRUCTIONS








- The Air Force Academy is open to the general public 9 a.m. to 5 p.m.
- Please park only in designated areas.
- If you must stop where there is no parking, please pull completely off the road. Buses may discharge and pick up passengers at the fronts of the Chapel and Visitor Center but may not park there.
- Speed limits are posted and enforced with radar.
- Check your vehicle's gas supply before proceeding.
- There are no public service stations on the Academy.
- Altitude at the Visitor Center and Cadet Chapel is 7,200 feet.
If you experience difficulty breathing, please take your time and rest often.
- The Academy has a large population of wild life. Watch for deer. . . .
If oncoming cars flash their headlights, it probably means deer are on the road ahead.
- Areas open to the public include the Visitor Center, Arnold Hall, Field House, Cadet Chapel and all the stops along the self-guided route.
- The Visitor Center is 8 miles from the South Gate and 6 miles from the North Gate. Park at the Visitor Center and enjoy a short nature trail walk to the Chapel. Visitors unable to walk the partially-uphill one-third mile trail should park in designated areas near the Chapel.

Follow the Falcon

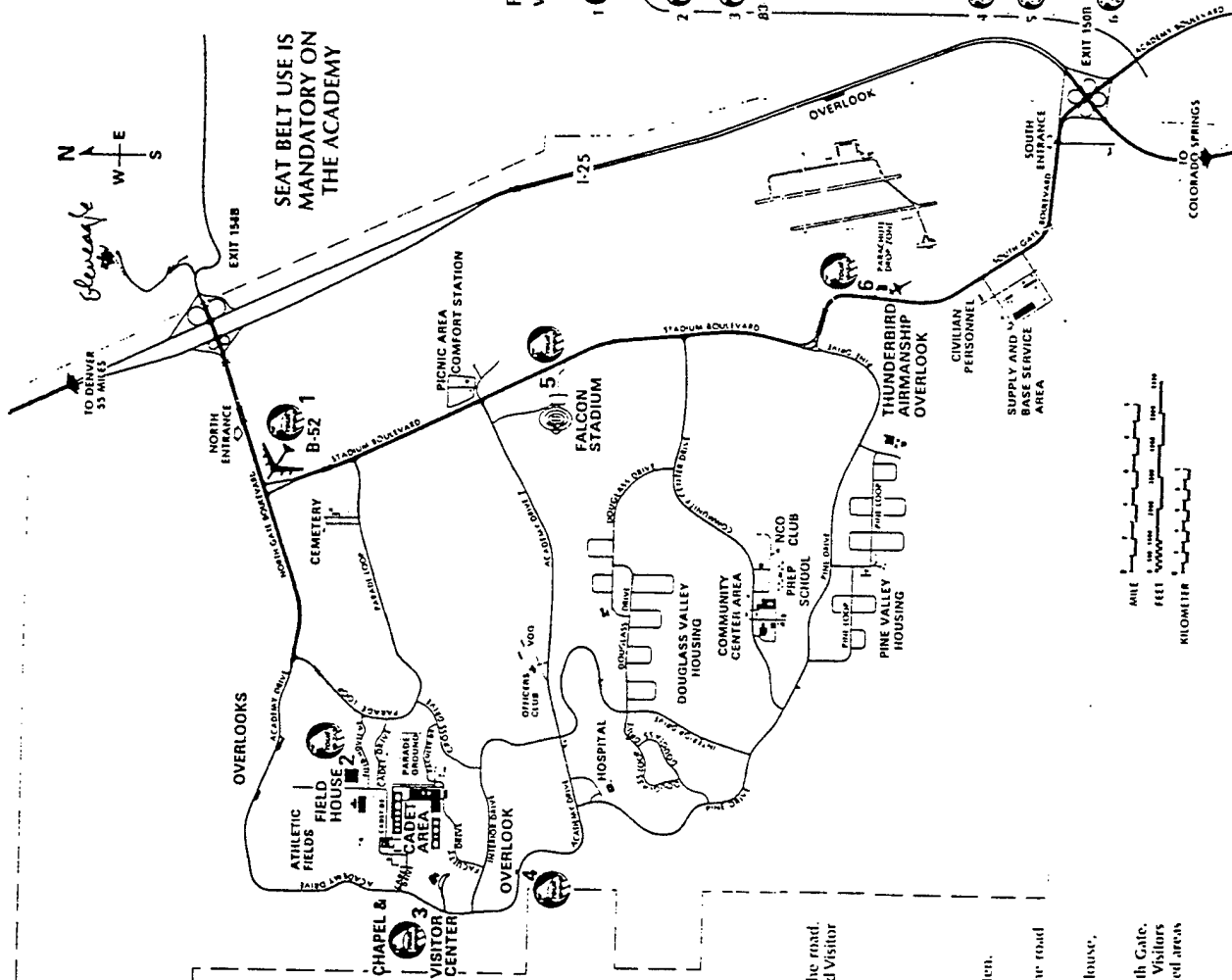


Self-guided Tour

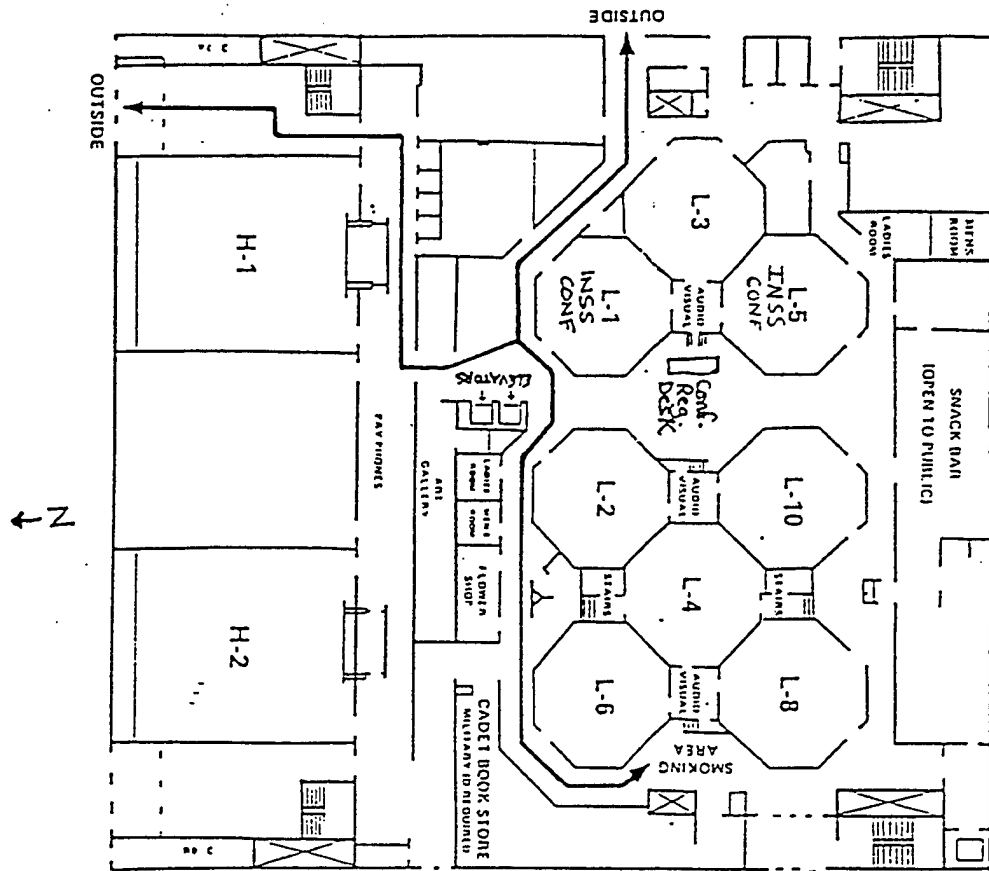
Points of interest do not have to be visited in the order listed.

- 1  **B-52 Display**
The B-52 has been the backbone of America's manned bomber force for more than a quarter of a century.
- 2  **Field House**
Athletic building, open 9 a.m. - 5 p.m.
- 3  **Visitor Center & Chapel**
Visitor Center contains Academy displays, theater, gift shop, restaurant, restroom, and public telephones. Open everyday 9 a.m. to 5 p.m.
- 4  **Chapel**
is one of the most distinctive buildings in the country and offers excellent view of the cadet area. Open Monday through Saturday 9 a.m. to 5 p.m. and Sunday 1 to 5 p.m. (except when closed for special events and for five days around graduation).
- 5  **Environmental Overlook**
Excellent photo points with a nature trail.
- 6  **Tadon Stadium**
Site of home football games and graduation.
- 7  **Thunderbird Airmanship Overlook**
Offers view of flying activities, displays on Academy airmanship programs and USAF Thunderbirds.

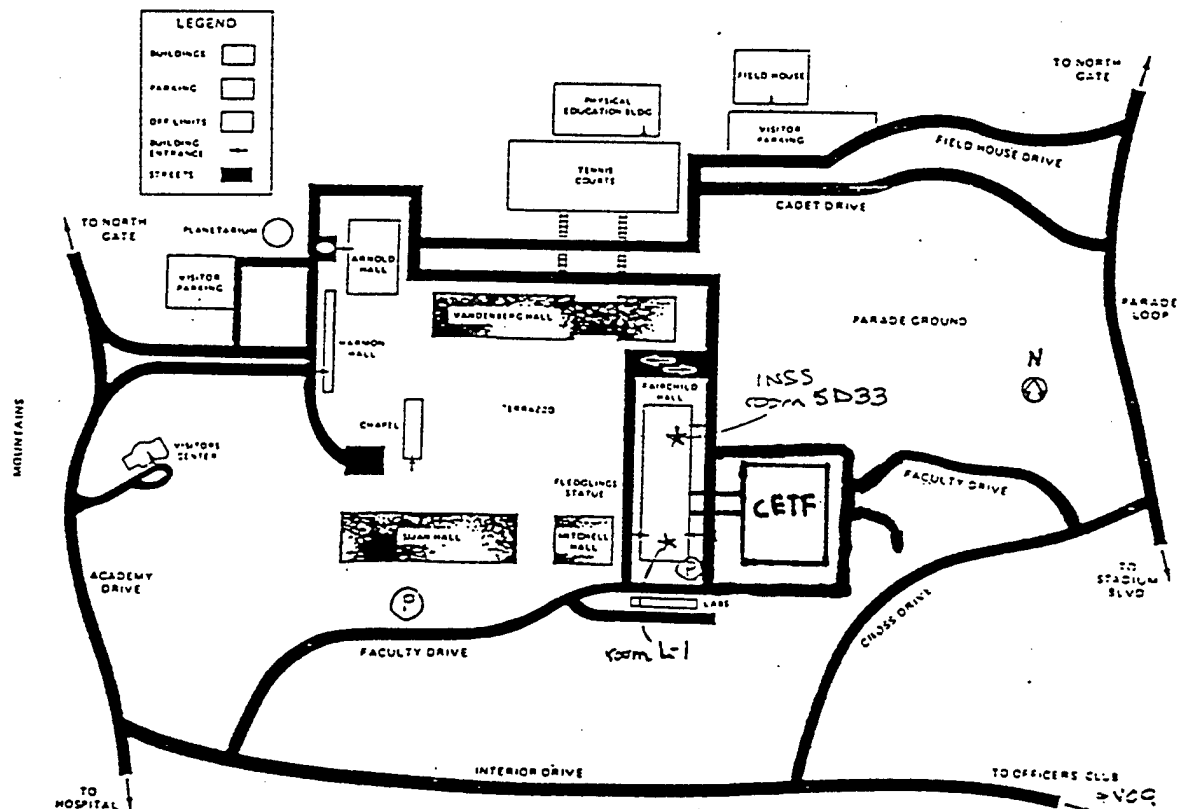
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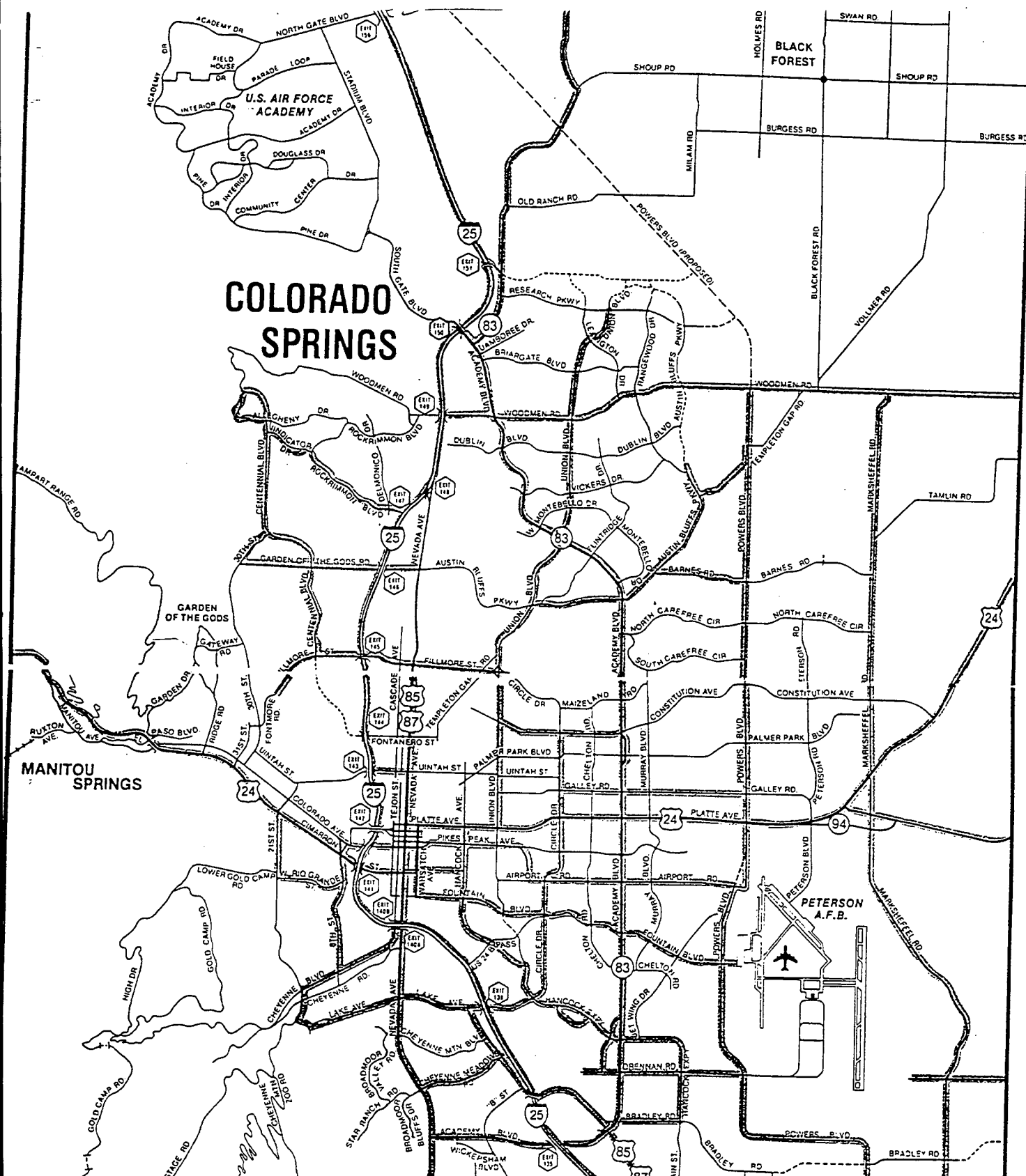


Fairchild Hall Conference Area Map

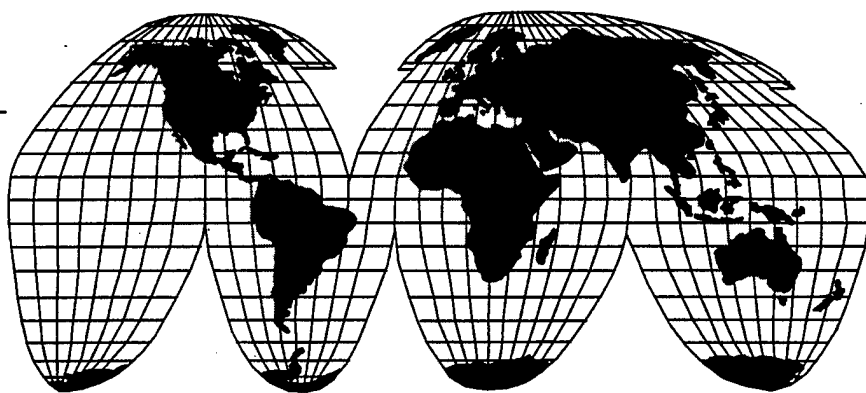


UNITED STATES AIR FORCE ACADEMY
CADET AREA



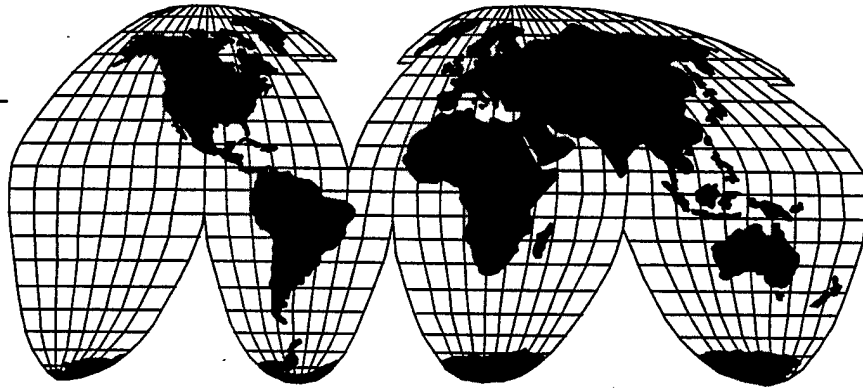


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Appendix

1996 Research Conference

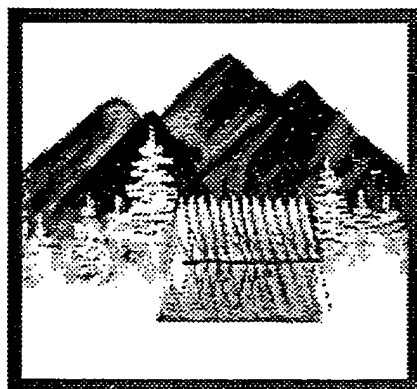


Appendix A

Executive Summaries

1996 Research Conference

USAF INSTITUTE for NATIONAL SECURITY STUDIES
UNITED STATES AIR FORCE ACADEMY



INSS

4th ANNUAL RESEARCH RESULTS CONFERENCE
7-8 November 1996

--EXECUTIVE SUMMARIES--

Panel 1: ARMS CONTROL AND PROLIFERATION

Lt Col Jeffrey A. Larsen, Senior Research Fellow, INSS

--The Development of an Agreed NATO Policy on Nonproliferation

Col Guy B. Roberts, Staff Judge Advocate, 2nd Marine Division, Camp Lejeune

--NATO's Response to the Proliferation of Weapons of Mass Destruction

Col Kurt J. Klingenburger, Kunsan AB, Korea

--Sustaining Alliance Air Operations in an NBC Environment

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--Russian-American Cooperation in WMD Counterproliferation

Panel 2: CONFLICT IN THE INFORMATION AGE I

Chair Maj Greg Rattray, Fletcher School of Law and Diplomacy

Assessing Adversaries Information Warfare Objectives and Capabilities

LT Donald Elam, Department Head School

--Attacking the Infrastructure: Exploring Potential Uses of Offensive IW

Maj Mike Muzzerall, Air Command and Staff College

--Military Responses to IW Violations of US National Security

Capt Roger Thrasher, Rome Laboratory

--IW: Implications for Forging the Tools

Panel 3: CONFLICT IN THE INFORMATION AGE II

Maj Bob Yahn, 1st Reconnaissance Squadron, Beale AFB

--The Information Web: A Vulnerability Assessment

Maj White, USAFA Department of Computer Science

--IW Units: Structure, Composition, and Mission

Capt Patrick Barker, USAFA Department of History

--Avoiding Technologically-Induced Delusions of Grandeur

Panel 4: AIR FORCE PLANNING ISSUES

Maj Richard L. Fullerton, USAFA Department of Economics and Geography
--Using Auctions to Reward Research Tournament Winners

Dr. Peter M. Taylor, USAFA Department of Economics and Geography
--National Defense Strategy vs the Budget: The Post Cold-War Battle

Capt. Craig R. Corey, Ramstein GE
--The Goldwater-Nichols Act of 1986 and its Effects on the US Air Force

Maj Richard D. Simpson, USAFA Department of Political Science
--Intervening in Chaos: A Call for New Doctrine

Panel 5: ENVIRONMENTAL SECURITY

Maj Russell Defusco and Lt Col Brian Cullis, USAFA Department of Economics and Geography
--Using Geographic Information Systems to Model Bird Distributions and Populations
on a Continental Scale

Dr. James M. Smith, USAFA Military Arts and Sciences
--Environmental Federalism and US Military Installations

Capt Laura M. Antalik & Dr. Samuel T. Ariaratnam, USAFA/CE & Univ of Alberta, Edmonton
--Environmental Security and Infrastructure in Poland

Panel 6: REGIONAL SECURITY (Europe)

Cadet First Class Jason Arnold, USAFA Cadet Squadron 34
--NATO Enlargement--Issues and Answers

Dr. Charles Krupnick, USAFA Military Arts and Science
--The Emerging OSCE Role in Europe's Security Architecture

Capt Stephen P. Lambert and Capt David Miller, Naval Postgraduate School
--US Nuclear Weapons in Europe: Current Environment and Prospects for the Future

Capt Steven R. Drago, USAFA Military Arts and Sciences
--Three Reasons Why the United States Still Needs NATO

Panel 7: REGIONAL SECURITY (Asia)

Lt Col Melvin E. Richmond, Defense POW/MIA Office
--US National Interests in the Socialist Republic of Vietnam

Maj Philip A. Smith, Naval War College
--The Dragon's New Teeth: China's Future Unmanned Air and Space Forces

Capt Robert L. Cummings Jr., 34th Airlift Squadron, Japan
--The Taiwan Independence Movement

Ms. Sharon Richardson, Olin Foundation
--Korean Unification: Probable, but Not Predictable

Panel 8: REGIONAL SECURITY (Middle East)

Capt John Capello, USAFA Department of Political Science
--The United States, Iran, and the Persian Gulf

Lt Col Terry Jones, 652 Combat Logistics Support Squadron, McClellan AFB
--Defense Cooperation in the Persian Gulf

Capt Tony Del Genis, USAFA Department of Political Science
--The Feasibility of US Joint Service Ballistic Missile Defense and an Examination of
US-Israeli Ballistic Missile Defense Initiatives

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Panel 1: ARMS CONTROL AND PROLIFERATION

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--Russian-American Cooperation in WMD Counterproliferation

THE DEVELOPMENT OF AN AGREED NATO POLICY ON NONPROLIFERATION

Jeffrey A. Larsen, PhD

**Lt Colonel, USAF
Senior Research Fellow
USAF Institute for National Security Studies**

*A Paper Prepared in Partial Fulfillment of the Requirements
of the 1995-97 NATO Research Fellowship Program*

*Grateful acknowledgement is given to the NATO Office of Public Affairs and the USAF Institute for
National Security Studies for their financial support of this research*

EXECUTIVE SUMMARY

The North Atlantic Treaty Organization (NATO) has become increasingly aware in recent years of a growing threat to its security and freedom of action. While this new threat is vague, and not nearly as well-defined as was the traditional Soviet threat of the Cold War, the increasing capabilities of potential proliferant states armed with weapons of mass destruction (WMD) could pose grave risks to NATO's territory and population, to its forces operating in regional contexts, and to its freedom of action to conduct out of area operations. There is a growing consensus that this new concern must be addressed in both political and military terms. While the degree of support for specific programs varies by individual member state, the overall feeling within the Alliance is one of meeting a future problem early through common planning.

The development of an agreed policy on proliferation has become a major goal for the North Atlantic Alliance. The Senior Defense Group on Proliferation (DGP) was most concerned with the military ramifications and counterproliferation aspects of nonproliferation policy. This is an innovative dimension of North Atlantic cooperation, and was at least partly responsible for the French decision to return to the military side of the Alliance structure in late 1995. The North Atlantic Council approved the DGP's conclusions and recommended work program in June 1996. Whether the Alliance can or will fund the new requirements identified by the DGP, however, remains problematic.

Among the NATO members, France, the UK, and the United States have the most far-flung interests and military reach around the world, and are therefore understandably most concerned over the implications of WMD proliferation with respect to those deployed forces. In addition, France, Italy, Greece, Turkey and Spain face increasingly hostile governments in many of the littoral states of the Mediterranean region.

NATO undertook several activities after the 1991 Rome Summit that focused on preventing proliferation via traditional political means--export controls, coordination of efforts to control sensitive technologies, and so on. In addition, it continued work in the well-established field of passive defense, including protective measures for individual soldiers against chemical agents. It began developing a conceptual framework on air defense, to include ballistic missile and cruise missile defense technologies. All of these efforts were, however, by late 1993 considered insufficient to meet the new proliferation threat. There was a glaring absence of military measures available should prevention fail or deterrence break down. It was this shortcoming that the NATO Summit addressed in January 1994.

In January 1994 the NATO Heads of State and Government, meeting at the Brussels Summit, emphasized that the proliferation of WMD and their delivery means posed a threat to international security and was a matter of concern to the alliance. This was a prelude to the announcement, at the June 1994 Istanbul NATO Ministerial meeting, of NATO's new policy framework on proliferation, in which the Alliance observed that a number of states on NATO's periphery were continuing to pursue weapons of mass destruction or their delivery means; that WMD and their delivery means posed a direct threat to the Alliance and its forces; and that WMD proliferation could occur despite traditional international nonproliferation efforts. NATO stressed that its response to this threat must include both political and military measures to "discourage WMD proliferation and use, and, if necessary, to protect NATO territory, populations, and forces." France and the US have led the alliance in its study of this issue.

It is the first two categories above--threats against NATO forces involved in regional contingencies, and direct threats against NATO territory--that NATO's Policy Framework most directly addresses. The Alliance is well on its way toward developing plans to meet such threats. The European view of counterproliferation initiatives differs from the United States' perspective through its greater emphasis on diplomatic, economic, and political means of countering WMD proliferation, although NATO does acknowledge the necessity for military options and preparedness.

There are four general approaches which the alliance might take in developing an agreed policy on nonproliferation: de-fusing proliferation incentives; enforcing international sanctions against proliferators; offensive military action against proliferators; and developing ballistic missile defenses. The first two areas would supplement existing approaches undertaken by other international organizations. The third area, offensive operations, is the one NATO has been least likely to pursue in the past, since it is inherently a defensive alliance. Recent events, however, such as NATO's involvement in Bosnia, may reflect a changing mind-set. The last option, pursuing BMD, is merely a continuation of NATO's traditional collective defense role, but it must overcome residual skepticism by some European members engendered by the SDI program in the 1980's. Nevertheless, some Europeans, especially the French, recognize that proliferation might eventually turn into an acute problem requiring military responses. Even Germany is beginning to accept the possibility that traditional approaches to nonproliferation may fail, so there is a need to think about military preparations should that occur.

The United States' official list of shortfall priorities, developed through its Defense Counterproliferation Initiative, is apparently very close to the list NATO prepared in the classified

DGP Phase III report. Fourteen key programs for increased funding and emphasis were identified in four areas: intelligence, passive and active defenses, and offensive counterforce capabilities. That the US and NATO lists overlap should come as no surprise, given that most of the items listed are common sense responses to this new threat, and given traditional American leadership in new military programs and strategies for the Alliance.

There will not necessarily arise any brand-new systems or programs as the result of this effort. Most needed programs are already underway--the United States alone has two or three programs in research and development in each of the 14 shortfall areas.

The major hurdle to developing these capabilities is, as always, money. The DGP effort is an attempt to expedite those procurement processes that may best support NATO's nonproliferation efforts, but it is only one part of the overall Alliance force development process. All states have said they are unable to support additional spending for new projects, so the question must be asked: what will NATO be willing to give up to have new capabilities within its current budget? Deciding who pays, how much, and for what, will drive much of the upcoming political discussion.

The DGP (and by endorsement the Alliance leadership) concluded that it was unrealistic to expect, despite prior NATO announcements, that there were sufficient resources to defend and protect NATO populations from a WMD attack, preferring at least for the short-term to rely on deterrence to inhibit would be attackers. The near-term focus will be on protecting allied forces fighting in or deployed to an NBC environment

The NATO nonproliferation effort surely ranks as one of the most ambitious in NATO's history. A concerted effort by an Alliance facing a new series of threats in an uncertain world led to the development of a comprehensive overview of the threats, the capabilities needed to meet those threats, existing shortfalls, and a plan to correct those deficiencies. The DGP's conclusions seem pragmatic, responsible, and modest. It remains to be seen whether the Alliance has the will to pursue these new programs in an era of fiscal austerity, public apathy, low-level threat, and military downsizing. In other words, NATO's nonproliferation agenda faces the same hurdles as have most of its predecessor programs. All of them seemed unlikely to succeed, too, yet most were accomplished through a combination of leadership, changing international circumstances and public perceptions, and the slow, methodical bureaucratic process. One must anticipate that the NATO nonproliferation effort will be equally successful, over the long term.

**NATO'S RESPONSE TO THE PROLIFERATION OF WEAPONS OF
MASS DESTRUCTION: THE EMERGING REALITY OF NATO'S
AMBITIOUS PROGRAM**

by

Guy B. Roberts

September 1996

**INSTITUTE FOR NATIONAL SECURITY STUDIES
U.S. Air Force Academy, Colorado**

EXECUTIVE SUMMARY

With the end of the Cold War the proliferation of nuclear, chemical and biological weapons (NBC) and their means of delivery, commonly called weapons of mass destruction (WMD), pose serious challenges to the United States and its allies. Despite years of effort at establishing nonproliferation regimes and attempting to persuade nations that the costs of attempting to acquire such weapons outweighs any benefits, would-be proliferators such as Iraq and North Korea, have confirmed that those efforts alone will not be enough to ensure the security and protect the national interests of the US and its allies. It is likely and expected that US forces will have to soon contend with an WMD-equipped adversary. Likewise, it is expected that US forces will operate with allied or coalition partners and, to the extent they are not trained or equipped for a WMD environment, WMD use would degrade the ability of coalition forces to accomplish their mission.

Recognizing a commonality of interests and understanding that the US cannot act alone in addressing this challenge to its national security interests, the US has persuaded its NATO allies to embark on a program of developing capabilities to respond to the threat of the use of WMD against NATO territories and forces. The US has taken the lead in developing strategies to counter the proliferation of WMD, and its Counterproliferation Initiative (CPI) is a comprehensive, well funded program that has identified shortfalls and established needed capabilities to overcome gaps in US defenses against such threats. It also includes capabilities to operate in a WMD environment and destroy an adversaries NBC weapons that threaten US forces.

Over the last three years, and after much cajoling by the US, NATO has embarked on the somewhat tortuous process of developing a similar capability recognizing that deterrence may not work and that there are international actors bent on WMD acquisition notwithstanding supply-side controls and international prohibitions against the use of such weapons. Additionally, taking on new roles, particularly out-of-area missions in potential WMD environments convinced the NATO leadership that a counter proliferation strategy was necessary.

In 1994 two expert groups were established. The Senior Political-Military Group on Proliferation (SGP) was responsible for developing an agreed framework that would become NATO policy for pursuing counter proliferation capabilities. This was approved in June of 1994. The Senior Defense Group on Proliferation (DGP) was tasked with identifying the security implications of proliferation, assessing needed military capabilities, and recommending additional capabilities to meet existing deficiencies and overcoming perceived NATO vulnerabilities.

In June of 1996 the DGP completed its initial tasking with the issuance and approval of "phase three" of its report. The report identified proliferation as a clear threat to NATO and emphasized the need for NATO to possess a "core" set of capabilities. It also stressed the need to developing appropriate Alliance doctrine, training and planning, and established a workplan or program for addressing identified shortfalls in Alliance

capabilities. The program of work established 39 "action plans" which validated ongoing efforts to develop needed capabilities and included new initiatives. It also included a timeline for achieving the recommendations of the DGP in the program of work. The DGP's report was endorsed by Foreign and Defense Ministers in June 1996.

However, while the work program was approved, several defense ministers made it clear that they were by no means signing up or agreeing to the proposed action plans. Given public ambivalence about the threat and increasing scarce defense budget resources it is highly unlikely that NATO will be able to follow through with the workplan as outlined by the DGP. In its current form, although comprehensive, it is overly ambitious, too expensive and unrealistic.

It is proposed that a more achievable (and supportable) program would revolve around three core initiatives.

First, create a NATO Proliferation Risk Intelligence and Analysis Center; a NATO controlled, centrally located, fully integrated, commonly funded and politically supported center for data dissemination, fusion and collaborative planning and execution in response to proliferation threats. It would be manned by top analysts from all members and all members would agree to provide raw data from all sources for the development of Alliance generated intelligence reports.

Second, using as a model The Technical Cooperation Program, a long-standing program for collaborative efforts between the US, UK, Australia, Canada, and New Zealand, Alliance partners agree to share resources and tasks in a wide variety of fields but primarily research and development and acquisition programs. An oversight group is necessary to bring together all levels of cooperation and collaborative efforts. Common funding is the best way to field equipment and systems under these collaborative programs.

Third, identify specific forces for training, exercising equipping and ultimately using in missions where WMD use is likely. It is unlikely that all NATO members will have the wherewithal to participate in such missions but rather may choose to participate a la carte. This will not work. Instead, utilizing current command structure (either the ACE Rapid Reaction Core or the Combined Joint Task Force), the near term focus would be on protecting allied forces likely to be deployed rapidly to out-of-area missions with the potential for WMD use. The US should financially support and equip these forces as a cost effective alternative to going-it-alone.

Past work of the DGP and other bodies within NATO have been extremely effective in educating the Alliance as a whole on the dangers of proliferation and that nonproliferation efforts are not enough. Resolve must be demonstrated with the commitment of forces equipped and trained to operate in a WMD environment and respond overwhelmingly to a WMD use. It may require Alliance forces to respond first in the face of imminent WMD use. Developing responses will be difficult and expensive. Only if the Alliance is willing to bear the expense and demonstrate the political will to face up to this challenge will these efforts have any chance for success. The steps outlined here have the best chance for public support and success against the proliferation scourge.

Executive Summary

Sustaining Alliance Air Operations in an NBC Environment

This project investigated the impact of proliferated NBC/M (nuclear, biological, and chemical agents/weapons plus the means to deliver them) on the ability of Alliance airpower to conduct sustained air operations in future conflicts or contingencies. The project looked at a narrow slice of the overall nonproliferation/counterproliferation efforts ongoing throughout the governments of the US and many NATO allies. What keeps NATO sorties flying in an NBC environment?

Senior policy makers throughout the Alliance as well as NATO's permanent staff in Brussels consistently identify the proliferation of the weapons of mass destruction as a severe threat in the coming decades. NATO member nations acting alone, in some ad hoc coalition or as a NATO force could be confronted with an adversary equipped and perhaps willing to employ NBC/M.

This study assumed the following:

- More countries (including potential adversaries) will acquire NBC/M (low or high tech) that credibly threatens Alliance air and sea-based airpower in theaters of Alliance operations.
- Alliance members will (if only for national reasons) continue to engage in combat and non-combat operations in support of NATO, OSCE, or UN mandates for the foreseeable future.
- Precedent setting examples from the 90-91 Gulf War and the Bosnia conflict indicate a continued desire to conduct such operations in true coalition fashion based heavily on NATO standards of training, interoperability, and logistics.
- The US (and other countries) has long recognized the importance of NBC/M but put most NBC considerations in the "too hard to work" or "too expensive to fix" categories. Moreover, a Cold War reliance on strategic nuclear weapons to deter and retaliate against adversary NBC use allowed the relative luxury of relegating to military backwaters serious attention to prolonged operations in NBC environments. This may have been most true in the air forces. Reliance on Alliance strategic systems may not now be sufficient, if indeed it ever was.
- Individual Alliance members are each a considerable distance from adequate preparation for operating in NBC environments.
- The Alliance as a whole is even further from the minimum preparation. Without improvement in this area, coalition efforts could significantly falter in the face of threatened or actual adversary use of NBC. With sufficient preparation, NATO could project a more unified and determined face to an adversary and thus better deter adversary NBC use in the first place.

Extensive research, including interviews throughout the Alliance structure, confirm that the progress that had been made by NATO during the 70s and 80s in the NBC realm is now slipping away due largely to budget constraints and the lack of a focused threat. The tool that the Alliance had given itself to force national-level compliance with quite stringent NATO standards of NBC preparedness is also losing its power to encourage national efforts: The NATO Tactical Evaluations (conducted by multinational, integrated teams of inspectors) no longer have the latitude or resources to look deeply into the capabilities of the member nations to "survive to operate" in the NBC world. Moreover, NATO-level exercises have virtually no NBC "play" in them and integrated headquarters within the Alliance military structure pay little attention to NBC questions. The leading Alliance members are generally reducing the emphasis they put on training and evaluating the preparedness of their air forces to sustain any prolonged operations in biological and chemical warfare scenarios. This is true equally, if not more so, of the United States Air Force, which most Alliance members generally see as the standard-setting force. Taken all together, it would appear that the rhetoric of Alliance political leaders regarding the dangerous spread of weapons of mass destruction is unmatched at the military level where preparedness for sustained air operations in an NBC environment is actually going down.

Lt Col Kurt J. Klingenger, U.S. Air Force
28 October 1996

**RUSSIAN-AMERICAN COOPERATION IN
WEAPONS OF MASS DESTRUCTION
COUNTERPROLIFERATION**

Capt Richard Dabrowski, USAF
393-D Ricketts Rd.
Monterey, CA 93940
(408) 655-8657

EXECUTIVE SUMMARY

This paper examines the opportunities and risks associated with a new form of military cooperation between the United States and Russia: joint strategic special operations for counterproliferation contingencies--to seize and secure, or to disable or otherwise neutralize weapons of mass destruction (WMD) facilities or WMD-armed terrorists. This paper compares Russian and U.S. views of the future security environment, looking for areas of overlap that could serve as the basis for mutually acceptable cooperative approaches to military options to deal with new WMD threats. The most effective military options--especially in areas in or around the former Soviet Union--might require the creation of a Russian-American response force similar to the U.S. Department of Energy (DOE) Nuclear Emergency Search Team (NEST), expanded to be usable against a wide variety of WMD threats. This paper analyzes the circumstances in which Russian-American SOF cooperation is more likely to succeed than U.S. unilateral action.

Information-sharing could serve the purpose of Russian-American cooperation in WMD counterproliferation, and this may initially be the most likely area of cooperation. A major difficulty is that while the United States and Russia currently enjoy good relations, a change in the Russian political

leadership could rapidly reverse this, and previously provided information could be used to the detriment of U.S. security interests. The proposed solution to this difficulty is to make agreements to share needed information only when the circumstances of the situation make it expedient to do so.

The United States still might have a "window of opportunity" to engage the Russians in bilateral counterproliferation activities, one component of which could be contingency SOF counterforce exercises. Because it is the primary inheritor of the former Soviet Union's WMD arsenal, Russia's involvement is essential to prevent a loss of control over these WMD materials and associated expertise. The disorganization following the breakup of the Soviet Union and current economic difficulties in the former Soviet states make this region the most likely source of leakage of weapons of mass destruction, fissile materials and WMD expertise. The cooperation envisioned by this paper need not require substantial new resources; equipment and training already provided or in place could be sufficient if innovative operational planning was undertaken. The effectiveness of any policy to prevent or counter WMD proliferation could be enhanced by including Russia in its development and execution.

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Panel 2: CONFLICT IN THE INFORMATION AGE I

Chair Maj Greg Rattray, Fletcher School of Law and Diplomacy
Assessing Adversaries Information Warfare Objectives and Capabilities

LT Donald Elam, Department Head School
--Attacking the Infrastructure: Exploring Potential Uses of Offensive IW

Maj Mike Muzzerall, Air Command and Staff College
--Military Responses to IW Violations of US National Security

Capt Roger Thrasher, Rome Laboratory
--IW: Implications for Forging the Tools

INSS Research Paper Executive Summary
of
"Assessing Adversaries Information Warfare Objectives and Capabilities"

The paper addresses three challenges facing potential U.S. adversaries who would consider attacking our information infrastructures with the following tentative conclusions:

- 1) How do adversary strategies relate to U.S. vulnerabilities? Simply assessing just what U.S. vulnerabilities are will prove complex and present adversaries with a significant intelligence challenges and difficulties in defining the relationship between expected impact from attacks and their political objectives.
- 2) Can the dual-use technologies necessary to conduct attacks (particularly based on electronic intrusion) be controlled? The paper distinguished between technology transferred as encapsulated in physical form, as codified information and as experiential knowledge. The paper concludes that efforts which attempted to control the diffusion of these technologies to potential adversaries would prove economically counterproductive and likely be futile.
- 3) Can adversaries assimilate the technological tools for conducting strategic information attacks into existing organizations, doctrine and strategic approaches. Increasingly highlighted in literature about commercial technology transfer, the question is often ignored in defense and intelligence analysis of adversary military capabilities. In the existing information warfare literature, the ability to assimilate technology by opponents is basically assumed. Drawing on the literature about commercial sector technology assimilation, the paper finds that assimilation challenges may prove substantial. Any adversary would need substantial human resources to consider mounting strategic information attacks. Also, state actors with institutional contexts and strategic cultures which don't mesh well with the types of technological tools and doctrinal changes required to conduct such attacks face very important (although difficult to measure) barriers.

The paper concludes with suggestions for defense and intelligence analysts who might be responsible for assessing these threats. Suggestions focus on the need to develop new sources of information and identify key points of our information infrastructure where intrusions may provide indicators of possible hostile adversary intent and strategic information attack capability.

NAVAL POSTGRADUATE SCHOOL MONTEREY, CALIFORNIA



THESIS

ATTACKING THE INFRASTRUCTURE:
EXPLORING POTENTIAL USES OF
OFFENSIVE INFORMATION WARFARE

by

Donald Emmett Elam

June, 1996

Thesis Co-Advisors:

Dan Boger
Vicente Garcia

Approved for public release; distribution is unlimited.

EXECUTIVE SUMMARY

The world has entered the Third Wave; it has entered the Information Age. One of the fundamentals of this paradigm shift is the fact that information is power. The side that controls information more effectively will be victorious. Thus, countries and militaries must change their mentality in order to survive. A new form of conflict, Information Warfare, has been born. This new discipline is large, dynamic, and complex.

In keeping with this ongoing revolution, the need exists for education among military officers and other concerned professionals throughout the country. This thesis helps to bridge the education gap. It presents a snapshot of Information Warfare today, exploring many different avenues and possibilities along the way. Roughly the first half of the document is focused on Information Warfare in general. The second half deals specifically with Offensive Information Warfare.

Like it or not, Information Warfare is a reality today. It is not a fad that will disappear in a few years (or even in the foreseeable future). In its most basic form, Information Warfare has been around for a long time. Technology has been one of the major driving factors in the current paradigm shift to the Information Age. Understanding the enemy's cognitive process and infrastructure are essential for effective employment of Information Warfare as a weapon. These are the major points of Chapter I. Most will be visited again in more detail in later chapters.

Chapter II concentrates on definitions related to Information Warfare. This is perhaps the area of most concern and dissension. Fundamental to a successful manipulation of any weapon is understanding it. Part of the process of understanding that weapon is knowing its language.

There are any number of interpretations of the IW language, and this fact only complicates the problem further.

Chapter III addresses the people, places, and things of IW. It talks about the players involved in the process, from the Executive Branch to the Department of Defense (DOD) to commercial entities. While not every possible organization can be addressed, the reader should be able to get a good feel for the scope and breadth of efforts.

The next chapter, Chapter IV, discusses the role of technology in IW. The rapid technological explosion, with no apparent end in sight, contributes significantly to the potential of Information Warfare. Not only are some of the technologies themselves reviewed, but also the execution of the paradigm shift, in the form of such things as the Global Information Infrastructure (GII), is scrutinized. Finally, the chapter concludes with an examination of some of the current trends in the IW field.

While the first four chapters concentrate mostly on essential background material, Chapter V begins to delve into the major focus of this thesis: Offensive Information Warfare (OIW). The basic definition of OIW, first presented in Chapter II, is reviewed and expanded. Potential reasons that would provoke the use of OIW are explored. Some tools that could be used for OIW attacks are discussed.

Chapters VI forms the heart of the thesis. Up to this point in the thesis, periodic references have been made to the important role of a country's infrastructure in determining the outcome of a conflict. The chapter defines a generic infrastructure that is necessarily broad in scope yet useful for any number of situations. The discussion includes some specifics in using

the template. Various levels of employing OIW against the template are discussed. These levels range from force structures to time lines to Measures of Effectiveness (MOEs).

Chapter VII is a critical review of the difficult issues surrounding the use of OIW. Included in the discussion are political, legal, economic, and moral dilemmas. Other problems discussed include military considerations, repercussions, and coalition OIW operations. For example, how does one coordinate an OIW attack with an ally that may one day be an enemy?

Finally, Chapter VIII presents a review of the thesis and some recommendations on IW for the United States. Included are discussions on definitions, organizations, weapons and tactics, and issues. As IW endeavors increase, so will the number of problems. Only by tackling the hardest issues head-on will one begin to see a decrease in confusion and an increase in productivity. This is by no means an easy task, yet one that is essential to success.

The purpose of this thesis is not to present an all-encompassing view of Offensive Information War or even of Information Warfare in general. The field of Information Warfare is too big for any one individual or organization to fully comprehend all of its intricacies. That is not the purpose of this thesis. Indeed, due to the dynamic nature of this discipline, chances are that some, or maybe even all, of the material contained herein will be obsolescent upon publication. Instead, the goal of the thesis is to present one view of Information Warfare, as seen through the eyes of many. The hope is that some benefit will be garnered by the reader, even if it only sparks an idea or helps to understand the importance of this rapidly growing warfare dimension.

ACSC/DR/127/96-04

MILITARY RESPONSES TO INFORMATION WARFARE VIOLATIONS OF
UNITED STATES NATIONAL SANCTUARY

A Development Study Paper

Presented To

The Directorate of Research

Air Command and Staff College

In Partial Fulfillment of the Graduation Requirements of ACSC

by

Mr Ronald S. Gross
LCdr William J. Fulton
Maj Michael L. Muzzerall

April 1996

Abstract

The national security of the United States historically has been based on the concept of national sanctuary--the Atlantic and Pacific Oceans have provided a natural defense against other international actors. That sanctuary has seldom been violated, but when it has (or a threat has existed), the American people have taken drastic action: the Japanese attack on Pearl Harbor directly contributed to the nation entering World War II; Soviet nuclear missiles being placed in Cuba resulted in a naval blockade and heightened nuclear readiness in Strategic Air Command. How does information warfare affect our current notions of national sanctuary? If that sanctuary is violated, what actions are likely to occur?

This paper briefly examines the concept of information warfare, the dependence of the United States on technology systems and the resultant vulnerabilities. After showing that geographic national sanctuary does not exist in the technological information age, the Department of Defense (DoD) defensive measures taken to establish a new 'cybersanctuary' against the information warrior are briefly discussed. Legal limitations and the lack of a national policy on information warfare are discussed to see how they affect possible DoD responses to information warfare attacks on this new sanctuary. Various threats are discussed and are classified by their possible affects on the national interests of the United States. The occasions when the military instrument of power should, would or could be used in response to these threats are discussed.

The Department of Defense is planning for, but is not yet authorized to conduct, offensive/counter-offensive actions in response to the new informational threats. It is concluded that the realm of possible action will be determined and limited by the legal and policy considerations that have yet to be addressed by the National Command Authority.

NAVAL POSTGRADUATE SCHOOL MONTEREY, CALIFORNIA



THESIS

INFORMATION WARFARE:
IMPLICATIONS FOR FORGING THE TOOLS

by

Roger Dean Thrasher

June 1996

Co-Advisors:

Dan C. Boger
Carl R. Jones

Approved for public release; distribution is unlimited.

EXECUTIVE SUMMARY

Today, many feel that the world is in the midst of a Revolution in Military Affairs (RMA). The changes behind this RMA consist primarily of advances in information technology, which in turn enable gains in the precision, range and lethality of conventional weapons. But beyond enhancing how war was conducted in the past, many argue that a new form of warfare—called information warfare—is now possible. As part of an RMA, development of information warfare depends on technological changes, systems development and the adaptation of operational approaches and organizational structures in order to take advantage of this new capability. In terms of information warfare, much of the focus has been on assessing the operational and organizational issues. Less attention has been paid to the impacts on research and acquisition activities. Thus the focus of this thesis is on examining the nature of information warfare and the implications of the defining characteristics of information warfare for the research and acquisition systems.

Modern information warfare is heavily based on the use of information technology. With such use comes dependency, that in turn creates vulnerabilities that may be attacked and must be defended. The process of attacking an enemy's information and information technology vulnerabilities for any political or military purpose and the protection of one's own information and information technology is the essence of information warfare. The nature of information warfare is further delineated by the qualities of information technology itself:

- Has its own rules and limitations based on the unique traits of information technology
- No cleanly segregable systems in the traditional sense—more like C4I systems
- Dependent on commercial technologies available to most anyone
- Any warfare edge largely based on effective integration and exploitation of technology

These characteristics of lead to an investigation of whether the nature of information warfare will have specific impacts on technology research and acquisition activities.

Similar to the steps of a generic RMA, the impact of information warfare on acquisition can be probed by examining three different areas: technology, organization, and process. In terms of technology development, sowing the seeds for tomorrow's information warfare technology will require that the military engage with the commercial sector for the technologies to satisfy a large portion of military needs. Then the military would be free to spend its own limited funds on "investments in the margins" to address requirements not met by commercial developments. Some information technology characteristics may also make possible changes in the organizational structure of how such systems or services are acquired. One may be able to move to a decentralized system where users determine their own requirements and then local information technologists are largely free to buy, install and support their own equipment and services to meet their own user's information warfare needs. Promoting activities that enable this type of decentralization may be a key role of the acquisition world. Such activities would include continuation of R&D for military-unique issues, support for development of standards and architectures, development of contract purchase vehicles and demonstration of new technologies as a way to educate users. The organization to do this may not be that structurally different from today, although it might be greatly simplified and streamlined. Instead, it may promote ad

hoc alliances to address specific needs or collaborate on individual programs using modern information technologies. In terms of acquisition process, moves should be made to an incremental acquisition approach to keep up with advancing technology. There should be continual cycles of technology insertion via test beds and technology demonstrations such that the underlying system is never procured and disposed of in the traditional manner. With this goes an emphasis on managing the more stable functions that make up systems and on the information services required by the user. In many cases these functions will be embodied in mission-unique software and thus a prime focus of the acquisition process should be on development of operational software and integration of mostly commercial systems. In addition, the promise exists of cases where it may be cheaper and more effective to lease information technology or to discard an obsolete information appliance at the end of its useful life. Last is the issue of how to promote product integrity during design and development. To protect systems from information warfare risks, it will be important to ensure the systems engineering process includes activities that assess critical areas and that take steps to mitigate information warfare threats to critical system functions.

In sum, the defining characteristics of information warfare do prompt the need for changes in the acquisition community. Changes that range from focusing R&D on military-unique technologies useful in information warfare to organizational modifications in information technology acquisition to adjustments and improvements in the acquisition process. Changes that are key to ensuring the U.S. has the best chance of realizing the full promise of information warfare.

Panel 3: CONFLICT IN THE INFORMATION AGE II

Maj Bob Yahn, 1st Reconnaissance Squadron, Beale AFB
--The Information Web: A Vulnerability Assessment

Maj White, USAFA Department of Computer Science
--IW Units: Structure, Composition, and Mission

Capt Patrick Barker, USAFA Department of History
--Avoiding Technologically-Induced Delusions of Grandeur

The Information Web: A Vulnerability Assessment

A Research Paper

Presented To

The Directorate of Research

Air Command and Staff College

In Partial Fulfillment of the Graduation Requirements of ACSC

by

Maj John P. Adams
Maj Ralph K. Bender
Maj Roland J. Bloom
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Maj Eugene A. Rohl
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April 1996

Abstract

For the military, information warfare efforts often focus on operational and tactical applications, thus neglecting the strategic realm. For national security strategists, the term "vital interests" usually refers to tangible or at least quantifiable assets--money, territory, the lives of citizens, and sea lines of communications--and tends to overlook "virtual," or information, assets. This report addresses both of these shortcomings by analyzing the vulnerability to information warfare attack of three US systems: the Federal Reserve's Fedwire system, the Air Traffic Control system, and the electrical power industry. The attack medium is the public switched network (PSN), or phone system; this paper builds on the findings of a 1995 report entitled "The Public Switched Network: An Overview and Vulnerability Assessment."

Each main chapter contains a system description which focuses on connections to the PSN, an analysis of the system's important elements and vulnerability, and a hypothetical information attack scenario. The vulnerability analysis includes an original model for gauging the relative penetrability of any information system. In all three cases, the report proves that while staging an information attack requires some detailed knowledge of the target system, the information available to the public is sufficient to accomplish such an attack. Clearly, national security policy has yet to address these vulnerabilities, and even the industries themselves rely mainly on redundancy, piecemeal security procedures, and even luck to protect them from sabotage.

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Information Warfare Units Structure, Composition, and Mission

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United States Air Force Academy**

Executive Summary

Information warfare (IW) is a topic receiving increased attention in both the media and by Pentagon planners. IW entails using, protecting, or targeting information and information processing assets. The concept of IW is not new in that the military has long recognized the importance of correct and timely information in carrying out military operations. We have also long recognized the importance of denying useful information about our forces from an adversary to make their planning and execution functions more difficult. What is new, however, is the amount of information expected and required on the modern battlefield and the subsequent reliance on information processing assets. Recognizing this increased reliance on information and information processing assets, the Chief of Staff of the Air Force, General Ronald R. Fogleman, directed an Information Warfare Squadron be created with a target operational date in the Fall of 1996. Three years ago, the Air Force Information Warfare Center was created with the stated intention of providing offensive and defensive command and control warfare (C2W) support to US Air Force operations. The exact relationship between the new IW squadron and the established IW center is not clear, nor is the relationship between either of these two units and agencies such as the Defense Information Systems Agency (DISA) or the National Security Agency (NSA).

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Before determining what the relationship between the various IW entities should be, an examination of what IW functions exist in peacetime and during armed conflicts is necessary. IW functions can be divided into offensive and defensive measures. Defensive measures generally entail the protection of the computer systems, networks, and the information they store, transmit, and process. It is akin to the traditional computer security functions that have been performed for a number of years. Offensive measures take the form of 1) physical attacks on the information processing hardware (computers, communication devices, cables, etc.), the supporting infrastructure (power systems, building, etc.), or the people that operate the equipment; 2) logical attacks on the information or its supporting infrastructure through the use of malicious code; or 3) a combination of the other two. The peacetime mission of IW units is to perform the security functions as already mentioned and to prepare for offensive actions should they ever be required. The wartime mission of IW units also includes the security function as well as the offensive measures mentioned. In addition, the military today has become involved in events that don't fall easily into either peacetime or wartime missions. Known as *operations other than war*, these, generally short term, operations also require defensive IW actions as well as a limited set of offensive IW actions (mostly PSYOPS related). The IW units are currently manned with a combination of officers, enlisted, and civilian personnel from a variety of career fields. The recommended breakdown includes individuals from intelligence, PSYOPS, communications/computer, computer and electrical engineering, and security career fields. In the future, following a recommendation from a Senate Subcommittee studying security in cyberspace, the

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possibility of establishing a separate career field for *information warriors* should be explored.

The Impact of the Media and Direct Broadcasting System on the Nature and Conflict of Military Operations

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Executive Summary

Advances in technology have introduced a new era in media broadcasting. No longer does the public have to wait days for reports of events occurring somewhere else in the world. Today, the real-time nature of broadcasting, possible because of advances in areas such as satellite communications and computer networks, allows for almost instantaneous reporting of events as they occur. This has introduced a new degree of challenge to military planners who have long been concerned with maintaining the secrecy of future and current operations.

The animosity often exhibited today between the media and the military has not always been present. As recently as World War II a level of cooperation existed between the two which enabled both to perform their jobs in a manner each could live with. During the Korean Conflict, however, the news media frequently broadcast information that put military forces in jeopardy. As a result, the friendly relationship that had existed between the media and the military deteriorated. This relationship only worsened during the Vietnam conflict where television reports of the conflict could come from the battlefield itself. This brought the savagery of war to the public in a manner they had

never experienced before and, many claim, shaped public opinion in a way that directly affected the outcome of the conflict.

Since Vietnam, the relationship between the media and the military has been alternately friendly and hostile as the military has attempted to control or use the military during operations such as Urgent Fury, Just Cause, and Desert Storm. The military now acknowledges the impact the media can have on the secrecy of campaigns and has attempted to limit its access to information in operations such as Urgent Fury (the landings on Grenada) and Just Cause (operations in Panama). The media has also shown its ability to be "where the action is" as the incident in Somalia where camera crews were on the beach to film the landing of special operations forces demonstrated.

Besides the military's recognition that the media is often in direct opposition to its mission of secrecy, the media will play several key roles in all future operations. The media will undoubtedly, as it has in the past, be used as a platform to transmit propaganda and to try and influence public opinion--by all sides in a conflict. It can also be used to maintain public support of operations and help justify military actions as they occur. This is especially important in the new era of conflicts, typified by United Nations and multinational forces. The real-time nature of broadcasts, as well as the fact that many news organizations are international in nature today, also result in a level of coverage "behind the lines" that had not been possible before. This provides immediate feedback to planners that had before been possible only after reconnaissance assets had been able to view the results of military strikes. The level of media coverage now experienced will not

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be going away in the future but can only be expected to increase. It is incumbent on the military to take it into consideration as a real force to be dealt with in all future campaigns.

Methods to Address Indications and Warnings of Information Attacks

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Executive Summary

With the increased reliance on information systems on the modern battlefield, the potential for these systems to become a target of attack has also increased. In fact, the possibility that the National Information Infrastructure will be the target of attack in the near future is probably much greater than the possibility of a physical attack against the nation itself. This is due to the fact that not only the military but most businesses rely on this network of computer systems to conduct daily business. It is also due to the fact that an information attack incorporates much less risk than a physical attack and far fewer resources. This makes information attacks the ideal method for any disgruntled individual around the world who wishes to take action against the United States for some perceived offense. The reliance we place on our NII and other computer systems and networks also makes it critical that we detect when an attack occurs or, ideally, receive a warning that such an attack is about to occur so that we can prevent it. Obtaining indications or warnings of information attacks, however, is not an easy task.

The chief method to determine when an attack has occurred on a computer system or network is the employment of intrusion detection systems. These systems employ various methods to identify intrusions into the system. Simply performing isolated intrusion detection, however, is not sufficient to provide indications of a potentially larger attack. An attack on one system often may indicate that an attack on other, similar systems, is likely. In order to alert these other systems, a map of the current network is required as well as a method to disseminate this information to units in the field. The map should include the hardware and software running on systems throughout the Air Force as well as the networks they are connected to.

Obtaining warning that an attack is imminent requires an active intelligence gathering program coordinated with the intrusion detection function. The intelligence function should gather information on specific individuals who are members of organizations likely to target the United States. Details on the computer systems these individuals and organizations are interested in could provide a clue as to what systems might be targeted in this country. Additionally, corporate systems that have been attacked, as well as networks and computer systems of foreign countries that have recently experienced "hacking" or virus activity, could point to systems that may soon be targeted in this country.

Additional recommendations in order to build an effective indications and warning function for information attack include the implementation (and use) of a reporting procedure to pass the word "up the chain" that an attack is occurring. The ability to perform posture assessments is also important and tests of organizational security should be frequent and unannounced.

Avoiding Technologically-Induced Delusions of Grandeur:

Preparing the Air Force for an Information Warfare (IW)
Environment

by

Captain Patrick K. Barker, USAF

A Research Report Prepared for The Institute for National Security
Studies

United States Air Force Academy

1 October, 1996

Executive Summary

This paper answered a question posed by HQ USAF/INXI: What do Air Force personnel need to learn in order to operate effectively in an information warfare (IW) environment? The question asks for a bridge to the twenty-first century multipolar world. The author contends that the Air Force will not be adequately configured to meet the next century until its leaders demand, and pursue, fundamental restructuring of our educational, training and operational frameworks. Seventeen specific recommendations are outlined to show the way toward this goal.

This paper challenges the Air Force to seek long-lasting change by reaching deep into the very soul of the institution and redefining its *core values* and *core competencies*. Our current core values of *integrity, service before self, and excellence in all we do* make no mention of warfighting, intellectual prowess or creativity. One of our core competencies, *information dominance* is unrealistic. No IW education program ever devised will achieve it. Rather, we should pursue *situational awareness on a global scale* and prepare our personnel to operate effectively in an environment of uncertainty.

Until these values are changed, no education and training program -- even those based on the recommendations of this paper -- will last long enough to ensure victory in the future. More importantly, until these values are wholeheartedly *embraced* by the Air Force leadership and all Air Force personnel, they will only be hollow words incapable of preventing institutional fragmentation. Therefore, a call to meet the information warfare environment is truly a call to meet the future as a unified, airminded, Air Force.

Panel 4: AIR FORCE PLANNING ISSUES

Maj Richard L. Fullerton, USAFA Department of Economics and Geography
--Using Auctions to Reward Research Tournament Winners

Dr. Peter M. Taylor, USAFA Department of Economics and Geography
--National Defense Strategy vs the Budget: The Post Cold-War Battle

Capt. Craig R. Corey, Ramstein GE
--The Goldwater-Nichols Act of 1986 and its Effects on the US Air Force

Maj Richard D. Simpson, USAFA Department of Political Science
--Intervening in Chaos: A Call for New Doctrine

Using Auctions to Reward Research Tournament Winners:

A Theoretical and Experimental Investigation

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1 October 1996

Partial funding for this project was provided by the Institute for National Security Studies and the Defense System Management College.

USING AUCTIONS TO REWARD RESEARCH TOURNAMENT WINNERS:

A THEORETICAL AND EXPERIMENTAL INVESTIGATION

EXECUTIVE SUMMARY

According to the theory of research tournaments, if the government can make a credible commitment to reward a prize (contract) of known value at some specified date in the future, then firms should willingly expend their own resources on researching and developing new products in their attempts to win that prize. The government can also charge an entry fee to each competitor which seeks to win the prize, and extract the *ex ante* surplus from the competing firms to generate an entirely efficient research effort. Moreover, if the government is unsure how much to offer as a prize in these tournaments, it can alternately conduct an auction at the conclusion of the competition and force firms to submit bids for their products which act as the tournament prize. By conducting an auction at the conclusion of the tournament to determine the prize, the government can theoretically lower the expected cost of obtaining any given level of research effort.

If these theories of research tournaments are valid, they have potentially huge implications for the way DoD does business because they suggest the DoD can rely even more on competitive forces to keep defense costs in check and resort less to regulatory oversight -- even for major purchases. If the theory is correct this shift to increased reliance on competition, through the use of research tournaments and auctions, can be made even in those industries where there are only a few major firms. The important question, then, is whether the theory is accurate in predicting the results of tournament competition.

To test whether the economic theory of research tournaments (which consists of a number of mathematical optimization results) can accurately predict human behavior patterns requires the

controlled, laboratory-type setting of experimental economics. In the experimental economics laboratory, we are able to place human subjects in an economic setting which closely matches the conditions of a research tournament then observe whether the level of effort they exert (i.e, the amount of money they spend conducting research) approximates the level of effort predicted by economic theory. If experimental effort levels conform to those predicted by theory, the combined weight of the theoretical and experimental evidence would lend strong support to the belief that research tournaments will be reliable procurement mechanisms. If, on the other hand, the behavior of our experimental subjects does not approach that predicted by theory, then that would suggest a much more cautious approach to implementing competitive research tournaments.

To test the theory of research tournaments and auctions, we conducted experiments using nine different parameters -- varying the number of competitors, the length of time competitors are allowed to conduct research, and whether or not an auction was used at the conclusion of the tournament to award the prize.

Overall, our experimental results tended to compare favorably with those predicted by the theory in that the final winning research product tended to be relatively close to what theory would predict. However, instead of getting a uniform level of effort across competitors, we observed much more bimodal research strategies. In other words, if there were two competitors and theory predicted both should put forth an average level of research effort, we would generally find instead that one of the competitors would put in less than the predicted amount of effort while the other competitor would put in more than the predicted amount of research effort. The net effect of these two research strategies was to have approximately the same overall amount of research effort as that predicted by theory -- but a different distribution of research effort across competitors.

Past acquisition research has noted a recurrent pattern where firms bid excessively low on contracts early in a program's cycle, and then once the contract is awarded they renegotiate the price to avoid taking a loss. This behavior is commonly called a "buy in" because firms take early losses, essentially buying in to the contract with the expectation of earning a profit over the long-run through contract renegotiation. Typically, economists have laid much of the blame for this behavior on the government and DoD for being too willing to renegotiate contracts, and thus providing an incentive for firms to engage in this behavior. However, our research suggests that this behavior may be induced at least in part by the design of the competition itself. Once firms have engaged in their research, those costs are sunk, and therefore are not fully considered in the bidding behavior of the firm. As such, the firms which engage in a great deal of research are very likely to be saddled with substantial research costs which they are not able to recoup if the bidding turns out to be more aggressive than they anticipate. Their only recourse in this situation is to also bid low -- which would cause these firms to lose part of their sunk costs and hope to cover more than their variable costs with their initial contract bids.

One intriguing result we found in our experiments was the intense bidding competition that occurred between subjects when they were forced to participate in an auction at the conclusion of the tournament. Moreover, the auction bidding seemed to be very sensitive to the numbers of competitors in the tournament. With only two competitors we did observe a small amount of collusive bidding behavior but generally the cost of the tournament was in line with that predicted by theory. However, as we increased the numbers of competitors from two to five, the bidding became extremely aggressive and virtually all competitors that engaged in active research lost money in the tournament because they inevitably conducted more research than they would be paid for at the conclusion of the tournament auction. These findings suggest that the government may be able to get great value for its

money by conducting auctions at the conclusion of research tournaments -- but continued use of auctions will probably only drive some firms away from the defense industry.

Our major findings, therefore, suggest that indeed research tournaments can be used to generate efficient research efforts by firms. In fact, by conducting a long tournament with several competitors -- then holding an auction to determine the winner -- the government may actually be able to induce excessive research effort from the competitors. Thus, if the DoD is interested in merely getting the best one-time deal on a product or research project, it can probably achieve a superior outcome through competition alone without the use of any oversight at all. On the other hand, if the government wishes to preserve its industrial base and retain a number of firms in the defense industry, it can still do this with competition but the government probably needs to carefully monitor the length of the tournaments and limit the number of competitors in any procurement auction. Thus, this research suggests a switch from the oversight of individual firms and their micro-expenditures on research and development to an oversight of the general competition. This oversight should be aimed at achieving the optimal level of competition between firms so as to achieve an appropriate amount of expected profits. The oversight should not be aimed at the expenditures and effort levels of the individual firms. This shift away from a micro-oriented regulatory strategy to a macro- or industry-oriented strategy should result in substantial savings in the overall procurement budget because less detailed oversight will be required.

National Defense Strategy Verses the Budget: The Post-Cold War Battle

Research Report

to

United States Air Force

- -Institute for National Security Studies

by

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of the Defense Industrial Base

Department of Economics and Geography

U.S. Air Force Academy

October 15, 1996

This report is in response to an Institute for National Security Studies (INSS) request to analyze the likely pressures on future defense and Air Force budgets. If Congress remains determined to balance the budget, what is the outlook for the Air Force during the next ten years?

Executive Summary

Defense expenditures, including Air Force (AF) funds, have experienced substantial reductions in recent years, owing to reduced post-cold war threats and a cyclical drawdown from historically high peacetime force levels in the mid-eighties. Measured in inflation-adjusted dollars, national defense spending has declined 35 percent since its post-WW2 peace-time high in 1985. As a result, some argue that defense has paid its "fair share" in the drive to reach fiscal stability that has preoccupied U.S. national economic policy for most of this decade and, therefore, should be left alone. However, given the government's stated national defense strategy for the future, known as the Bottom-Up Review" (BUR), and the force structure required to support that strategy, planned defense budgets appear inadequate in a number of ways.

First, there appears to be a gap between the budgets the Department of Defense (DoD) put forward each year and BUR force requirements. This underfunding threatens to become much worse in the next decade. Motivations created by the underfunding gap and consequences of the drawdown have promoted short-term solutions that have adverse effects on our longer-run defense posture. Funds have been used to maintain current readiness and allocated for nontraditional national security uses such as countering the consequences of years of defense drawdowns on the military and the American economy.

These allocations have come at the expense of recapitalization and modernization of the military's stock of war making capital. As a result of the rapid buildup of these stocks in the early 1980's and the cessation of additions to the stocks in recent years, the aging defense stock will reach obsolescence in mass in the next decade at a time when funds likely will be less available to address the shortfall, a situation that has been referred to as the coming "train wreck."

Case studies of the planned recapitalization of the military's fighter planes confirm that unless expected cost and production efficiencies materialize in the use of budget resources, the planned fighter force for BUR will not be realized. Unfortunately, policies to stretch defense budgets do not appear to be showing much promise. These policies include reducing overhead by reducing the size of the defense infrastructure and increasing the efficiency of funds through acquisition reform.

A second aspect of the inadequacy of the defense budget is its lack of stability in the future. The defense budget doesn't exist in a vacuum. Within the context of the overall national budget, if decisions about other parts of the budget or even the size of the overall budget are in

flux then the defense budget also will remain in flux since budget parts have to fit together into a cohesive total.

Under the current national budget, the American economy is not on a sustainable path. The President's and Congress' fixes appear flawed. Both lack specifics about where program spending adjustments will come from. Both plans delay most of the hardest decisions until early in the next decade rather than addressing them now when they can be dealt with more gradually and therefore more easily. Early in the next decade the President's budget projects increases in defense spending and this trajectory doesn't appear politically feasible when so many domestic programs will be hit hard. On the other hand, Congress' plan calls for more defense spending early on. But to the extent the extra spending goes for new weapons programs, it will not help to close the budget gap. Furthermore, under Congress' plan, paying for tax reform with spending cuts -- the largest coming from domestic programs -- also does not appear politically feasible, indicating defense budgets may end up taking a bigger hit. The gap between the DoD budget and the BUR strategy has been estimated to be between \$20 billion and \$100 billion over five years. Calculations of possible shortfalls between currently planned DoD budgets and politically feasible ones add another \$40 billion to \$70 billion between 1996 and 2002 to underfunding and the gap could go much higher.

To close the gap, either defense budgets or the nation's defense strategy will have to change. Given current uncertainties about our national security threats and the apparent reduced concerns by the electorate about national safety, the defense strategy is more likely to move

toward available budgets than the other way around. Official reviews of national defense strategy in coming years should confirm this.

How the AF will fit within the changing strategy is at this point highly uncertain. To the extent that AF funds continue to receive a constant share of total DoD funds, the AF should experience percentage declines similar to declines in total defense spending. Altering this estimate somewhat, however, is the possibility that a re-evaluation of America's defense strategy that moves beyond the Administration's current approach may lead to an increase in the importance of the AF's role relative to the other services. This would increase its funding share compared to historical experience and slow the decline in future AF spending relative to declines in the other services. But given today's uncertainties about future threats, a more definitive analyses of AF prospects within the total defense budget will have to wait until a new official defense strategy is fully articulated.

**THE GOLDWATER-NICHOLS ACT OF 1986
AND ITS EFFECTS ON THE US AIR FORCE**

By

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**A research project for the
Institute of National Security Studies
United States Air Force Academy**

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Tier II**

EXECUTIVE SUMMARY

The Goldwater-Nichols Act was a watershed in military reform legislation. It added needed structure to the Chain of Command, redefined the commander's role at the operational level of war, and it forced the services to operate more jointly and with less interservice rivalry. It was a necessary piece of legislation whose most major parts made the Chairman the principal military advisor to the President, placed the Joint Staff under his immediate supervision, and created a Vice-Chairman to act as his deputy. The act itself did not violate the Title X responsibilities of the service chiefs to train and equip their forces, rather it attempted to make the chiefs train and equip their forces to fight in a joint environment.

There is no need for further legislation in the form of a "Goldwater-Nichols II." The original legislation set the clock in motion, and any further legislation would infringe on Title X responsibilities of the service chiefs and would, if not openly, create a de facto general staff system. The services will never work together in a totally frictionless state, but the Goldwater-Nichols Act did not create more friction as some would believe.

THE AIR FORCE AND JOINTNESS

Air Force doctrine is not inherently joint; it can be used either unilaterally or in a joint endeavor, but its capabilities are exploited when used in a joint environment. Through airpower, one may strike strategically at the heart of the enemy, thus having immediate consequences on the battlefield. How the airpower of the Air Force is influenced in the joint battle are:

- The capabilities of airpower work best when used in conjunction with another means.

- Control of the aerospace environment opens up numerous possibilities on how to conduct a campaign.
- Control of the air takes the high ground of the battle space, and allows the surface forces to move in security.
- The single biggest contribution the Air Force has made in joint doctrine is the concept of the Joint Forces Air Component Commander (JFACC). The doctrine does not specify what service the JFACC will come from. The type of airpower and in what medium it will be used in determines what service the JFACC will be from.
- No component commander is responsible for preparing the battlespace; this is the responsibility of the Joint Forces Commander.

DEFENSE PLANNING AND THE ROLE OF THE JROC

The Joint Requirements Oversight Council (JROC) consists of the Vice Chairman of the Joint Chiefs of Staff, the Vice Chiefs of all the services, the Pentagon Comptroller, the assistant secretary of defense for strategy and resources, the director of program analysis and evaluation, and the undersecretary of defense for acquisition and technology. The objective of the JROC is to put the best interests of the entire military ahead of individual service interests and eliminate redundancies in service procurement efforts. It was designed to end service dominance, waste, and redundancy that had plagued weapons systems acquisition. The Joint Warfighting Capabilities Assessments (JWCA) are designed to weigh the overall contributions to the joint warfighting environment of individual weapons systems that the services want to purchase. There needs to be a proper balance between too much service input and not enough, since the service staffs are the experts on the weapons it wishes to buy. This balance has not been met. Problems with the JWCA are:

- It misuses operations research methods.
- There is a lack of overlapping evaluation of systems.
- There is not enough time allocated to the process.

- The process tries to hard to find a consensus rather than the right answer.

Several things must be accomplished to rectify the problem, and a few are put forth in this effort:

- Make the board of two stars the current VCJCS Gen Ralston is presently forming to prioritize requests and resolve issues at a lower level have JWCA and JROC issues as their sole jobs, not additional duties.
- Joint Staff participation is crucial, but the main players on deciding issues should come from the services and unified command staffs, the "supplier" and "consumer" of the weapons systems that will be bought.
- Reduce committees and consultants.
- Develop a way that the individual JWCAs can cross talk with each other during the process.
- Do not send the Chairman's Program Assessment to the Secretary of Defense cloaked in a shroud that it represents the consensus of the four service chiefs because it really doesn't.

Any greater outside involvement by the Joint Staff or the unified commands dictating to the services what weapons should be bought will step over the Title X line of giving the Chiefs the responsibility of training and equipping their forces as they see fit.

JOINT PERSONNEL

The Goldwater-Nichols Act sought to strengthen the quality of officer assigned to joint billets, particularly the Joint Staff. Officers who were placed on the Joint Staff were monitored and/or pressured by their parent service, were not promoted at the same rate as the peers who advanced to service staff jobs, and were not well prepared for joint duty. Title IV of the Goldwater-Nichols Act changed this by the following provisions:

- Establish a joint career specialty in each service.
- Strengthened the requirement for joint duty to be promoted to general or flag rank.
- Established that officers serving in a joint tour could not be promoted at a rate less than their peers serving in service-specific billets.
- Established Joint Duty Assignments and 1,000 "critical" joint billets.

These mandates have created a problem in that it is difficult for the services to take its highest qualified officers out of service specific jobs and place them in the required joint billets. The critical jobs identified by the Air Force for field grade officers to hold and still be competitive for higher rank are squadron commander and squadron operations officer. These jobs come at roughly the same time officers are expected to serve in a JDA.

Another problem is that at some agencies, the Defense Mapping Agency, only 50% of the billets are coded "joint." Two people could be sitting in the same office, doing roughly the same job, but only one of them receives joint credit. Obviously, this can cause morale problems.

Goldwater-Nichols was supposed to end the era of "ticket punching," a term illustrating when an officer serves in a job for the sole reason, and only long enough, to get it on their records. If anything, Goldwater-Nichols has institutionalized this, given the provision that officers serving in a joint billet must be promoted at a rate no less than those officers serving in a service-specific job. The best way to ensure that one goes to a joint job is to attend Intermediate Service School (ISS) in-residence, since one of the intents of Goldwater-Nichols was to place all ISS graduates in JDAs. The Air Force only sends roughly 20% of its officers to ISS, compared to about 50% for the Army, thus giving a small pool in which to draw officers from. There are

the JDAs that must be filled, critical service specific leadership jobs as mentioned earlier, and then the normal staff jobs, but a small group of resources to draw from.

Options to alleviate this burden on the services, and the Air Force, are:

- Allow officers in the grade of O-3 to service full or partially in joint duty assignments. The requisite education can be taught at a primary professional military education level.
- Decrease the number of "critical" JDA slots.
- Send more officers to ISS in-residence.
- Reform the Air Force's promotion system.

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**INTERVENING IN CHAOS:
A CALL FOR NEW DOCTRINE**

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1 October 1996

EXECUTIVE SUMMARY

U.S. national security interests are imbedded in an international system of independent states operating in the Westphalian tradition. Recently, these interests have also come to include the notion of "justice" in terms of both inter and intra state actions. As we have in the past, the U.S. will act to protect its interests and in doing so develop military doctrine to guide the use of military forces as an instrument of national power and a means to protect our interests.

Current doctrine, however, is inadequate for the task of intervening in failed states. A review of state-centric doctrine such as Warden's "Enemy as a System" and Boyd's "A Discourse on Winning and Losing" and counter-insurgency doctrine found in Army and Air Force manuals finds them all lacking. Each of these approach's success is contingent upon certain key assumptions. The object of military force in each case is either an actual state or an insurgency group mimicking one. Additionally, we assume these actors approach conflict as a western, rational actor. These assumptions are at the core of both doctrine sets and thus our means of imposing costs or risks on the opposing actor to either compel or deter them towards some desired end. In the case of failed state intervention these assumptions are non-existent.

Failed states are a significant threat to both the desired system and the notion of justice. They are however, not susceptible to military action guided by traditional doctrine. Failed states have themselves lost the ability to act as a unitary rational actor and instead have disintegrated into multiple sub-state units motivated by survival, a zero-sum view of other sub-state units, and a high propensity to solve conflict through genocide and extreme violence. These sub-state units do not subscribe to the notion of a state or

abide by Westphalian norms. As such they neither possess nor respond to force applied against the same centers of gravity as a state or pseudo-state. Instead they have a unique character of their own and doctrine must be shaped to meet this reality.

Failed State doctrine must simultaneously apply both constructive and destructive force against force points in multiple levels unique to each operation. Force can no longer be seen as strictly destructive. In fact the desired end of a viable and self-sustaining state will require force that can not only neutralize the opposing sub-state units but also help restore the state. Force points are important because they break the long-standing paradigms of centers of gravity and strategic paralysis. Failed states are already paralyzed and force must be applied that breaks this state of existence and moves the remnant state back to self-sufficiency. Multiple levels are important because the operation is not uni-dimensional but rather requires action both in parallel and sequence. These actions must simultaneously shift the individual back to the state, disrupt the sub-state units, and make the new state viable and self-governing.

President Clinton, the JCS, and the American people have all stated we will intervene in failed states, resolve humanitarian crises, and act to preserve an emergent sense of justice. Given the inevitability of U.S. action in failed states, we must develop doctrine that will increase our chance of success, minimize the loss of blood and treasure, and sustain our interests as captured in a Westphalian, justice-based state system.

Panel 5: ENVIRONMENTAL SECURITY

Maj Russell Defusco and Lt Col Brian Cullis, USAFA Department of Economics and Geography

--Using Geographic Information Systems to Model Bird Distributions and Populations
on a Continental Scale

Dr. James M. Smith, USAFA Military Arts and Sciences

--Environmental Federalism and US Military Installations

Capt Laura M. Antalick & Dr. Samuel T. Ariaratnam, USAFA/CE & Univ of Alberta, Edmonton

--Environmental Security and Infrastructure in Poland

USING GEOGRAPHIC INFORMATION SYSTEMS TO MODEL BIRD
DISTRIBUTIONS AND POPULATIONS ON A CONTINENTAL SCALE

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SUMMARY

The objectives of this study were to use physiographic, geographic, and climatic correlates to describe the breeding and wintering distribution and abundance patterns of Turkey Vultures (*Cathartes aura*) in the continental United States and model the hazards posed to aircraft by these birds. Thirty years of data were correlated with remotely sensed and ground sampled environmental data in a raster-based geographic information system (GIS). Environmental factors evaluated include elevation, hydrography, thermal reflectance, temperature, precipitation, snow cover, number of frost-free days, vegetation types, and ecoregions, for each 1 Km² block of the continental United States. A GIS overlay process was used to determine statistical relationships between environmental factors and sampled vulture data. Vulture numbers were most strongly correlated with geophysical factors throughout their range and between seasons. Breeding vultures were most strongly positively correlated with heterogeneous and more open physiographic habitats. Wintering vultures were more strongly correlated with forested areas, presumably for thermal roosting cover. These techniques have helped better determine Turkey Vulture habitat requirements on a scale never before attempted, and can be used for other species in the future. Modeling techniques can be used to identify specific areas where birds pose potential hazards to aviation.

(Key words: GIS; modeling, vultures)

**Environmental Federalism and US Military Installations:
A Framework for Compliance**

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The views expressed in this paper are those of the author and do not necessarily represent the
views of the US Air Force or the US Air Force Academy.

Executive Summary

Recent regulatory trends and political decisions have resulted in continuing devolution of environmental regulation responsibility from the federal government to the states. The resulting compliance situation for the military is one of complex, multiple bureaucracies, multiple and layered state and federal regulations, multiple reporting requirements and channels, and multiple mission priorities, all in a "business" with inherent potential for significant environmental damage. The military official charged with environmental compliance is serving many masters and responding to many pressures. This paper suggests a compliance strategy and organization to respond to environmental devolution and federalism.

The paper first sets the context of environmental regulation today, characterizing the development of environmental policy as incremental (progressing with advances in science and politics through a series of increasingly broad regulatory requirements), fragmented (between pollution mediums--air, water, waste--and with multiple executive agencies, legislative committees, courts, interest groups, and state agencies), and federal (with national, state, and local governments all sharing responsibilities for formulating and implementing environmental standards). State regulatory policy decisions and actions are next characterized to help understand state-level actions and trends.

Empirical studies of state regulatory policy find that political factors, including unified party control of the governorship and the legislature, bureaucratic capability, and recent changes in state population, best explain state actions. Economic factors including competition with other states and general state wealth are also important influences. These and other factors, particularly the economic significance of the particular polluting industries, account for much of the empirical evidence found in studies of state environmental regulation (air, water, and waste). Overall, state environmental policy can be explained by a combination of 1) the severity of the state's pollution problem, 2) the wealth of the state's population, 3) the partisanship of state politics, and 4) the organizational capacity of the state government. Interest groups are much less significant at the state level than they are at the national level.

Attempts to specify an integrated model of state policy actions are of mixed utility, but the Lester model, focusing on state bureaucratic capacity and environmental motivation, appears to have some utility for predicting enforcement stridency at the installation level. Field interviews

at military bases in four states (California, Colorado, Oklahoma, and Wyoming), representing Lester's four policymaking and enforcement categories, demonstrated that the model seems to be highly accurate in characterizing state actions.

With the realization that environmental federalism is here to stay, military environmental managers should devise a compliance strategy which adapts to local demands while also ensuring continuing mission accomplishment. Local adaptation will require close monitoring and analysis of the driving political and economic factors indicated in the empirical literature as responsible for state policy and action. The severity of environmental threats and the wealth of the state are not given to short-term changes, but they must be monitored for any changes which might impact upon state motivation or bureaucratic capacity. The state partisan political balance and any changes in the state organizational structure for environmental regulation must be even more carefully monitored for near-term impacts on environmental policy and enforcement.

Armed with current knowledge of state motivation and capacity for environmental stridency, the compliance strategy must incorporate continuity, coherence, and communications. Continuity is essential in the face of incremental environmental policy changes. Coherence helps bridge across the fragmented policies and organizations which characterize environmental enforcement today. And communications are needed to help state regulators understand unique demands of the military mission while also keeping base environmental managers informed of state concerns and positions.

As environmental regulation is characterized by layered federal and state regulations increasingly enforced by the states, a state-centered compliance strategy might best be implemented by a military structure built around the principle centralized control, decentralized execution. The commands are not generally helpful as intermediaries between adaptive base officials and service overseers, and might best be removed from the policy and action chain of command. Total centralization with bases reporting to service headquarters would limit local adaptability needed in today's decentralized situation. Conversely, total decentralization to the base level, while consistent with the management structure chosen by the National Park Service for a situation not unlike that of environmental regulation, is inconsistent with military culture and tradition. The mix of national input, particularly given the continuing role of national

standards, is of value, but must be adaptable to fit local base conditions. A revised structure and chain would perhaps best enable that coherence with adaptability.

Finally, continuity in the local base management is also essential. Base-level environmental managers must have tenure to lend the continuity and coherence which the strategy calls for. Military tour extension, or reliance on civilian personnel in these positions, would seem to be indicated. Research also indicates that state and local regulators tend to lump all military installations into one category, so bases must communicate with each other to learn of issues and precedents at one which will likely affect others shortly.

The states will continue to sit at the center of American environmental regulation. Knowing what drives state policy and action, understanding how your state combines motivation and capacity to determine its particular stridency of enforcement, and adapting national direction to form a continuous, coherent base compliance strategy will allow bases to complete their military missions within environmental constraints. All of this requires constant monitoring, analysis, adaptation, and communication, but it can and must be accomplished. Bases carry out national policy mandates, but they are also tenants within state environments. They must adapt to both sets of demands.

Executive Summary

Environmental Security and Infrastructure in Poland

by Samuel T. Ariaratnam¹, Ph.D., P.Eng and Capt Laura M. Antalik² (USAF)

As the largest central European country that borders the Baltic Sea, Poland possesses a great amount of natural resources and a diverse landscape ranging from the "flat plains and gently rolling hills" which cover most of the country to the rugged mountains which form the southern boundary of Poland. As a country that formed part of the former Communist Bloc, Poland has had to endure a Communist form of government since the end of World War II. The fall of the Soviet Union has resulted in an increasing shift towards becoming a Democracy as evident by a large non-Communist victory during its first elections held in 1989. Although this shift toward democratization has resulted in improved social and political conditions, the Soviet legacy of unregulated industrial development and environmental neglect has left Poland a country with environmental problems it must deal with for many years to come. —

For over forty years, Poland suffered just as much environmental damage as any other Eastern European country under Soviet rule. Investigations conducted in 1989 of Poland's environmental conditions revealed extensive damage to air, water, soil, and forest life. The damage was especially pronounced in the industrial districts of Upper Silesia and the areas surrounding the city of Krakow. Since 1989, Poland has undergone major changes in its economic outlook and has made a priority of reconciling economic development with environmental protection. Significant environmental improvements have been attained, largely as a result of the adoption of newly created environmental policies and the restructuring of the industrial and energy sectors. Poland has placed high priorities in the battle against pollution of air, water, and soil, along with measures to combat waste management problems. There are even several recycling programs currently in effect. The addition of environmental monitoring programs have proven to be successful in providing a means of collecting valuable data on the environment and assessing current practices.

This research provides an overview of current environmental conditions in Poland and addresses several key issues pertinent to environmental security. Several of the issues examined in this study include; the general state of the environment, current policies at several Polish industrial facilities, institutional capabilities for managing resources and issues, and potential situations of future conflict due to disagreements in the environmental arena.

Foreign assistance has led to a national air monitoring network which consists of 49 basic stations and over 8,000 supervising stations. The basic stations are located throughout Poland forming a network which covers most of the country. The task of the basic stations is to record

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air pollution data in Poland's lower atmosphere to evaluate the trends in changes of air quality. At these stations, measurements of SO₂, NO_x, and particulates as well as concentrations of pollutants which are characteristic for the given region are carried out 24 hours a day. The results of these measures are continuously displayed electronically for public view.

Measurements and information on water quality are produced by specialized services such as the State Inspectorate for Environmental Protection, the Institute of Meteorology and Water Management, and the State Geological Institute. The Geological Institute's stationary groundwater monitoring network has approximately 600 stations, including 40 with multiple bore holes. Contaminant levels and flows of major rivers such as the Vistula and Oder are continuously monitored by a national network of 640 measurement points within the rivers and 56 measurement points along international borders. Thirty-three of Poland's lakes are continuously monitored, 1,050 are part of the national monitoring network and are regularly assessed, and efforts are underway to establish an additional 1,150 measurement wells for groundwater quality and quantity.

The Ministry of Environmental Protection, Natural Resources and Forestry, founded in 1985, is the highest level of environmental authority in Poland employing around 300 people. It is currently overseen by the Minister of Environment. In early 1991, the State Environmental Protection Inspectorate was established to regulate polluting industries. Fines collected from environmental violators are placed in the National Fund for Environmental Protection and Water Resource Management. Almost thirty percent of the fund's revenue comes from fines on emissions of sulfur dioxide, nitrogen oxides, and saline coal mining water.

The greatest environmental concern on military bases is pollution from Petroleum, Oil, Lubricant (POL) deposits in the ground. Pollution and contamination from POL has detrimental affects on the soil and ground water. Penetration of POL takes many years and could have begun taking place on military bases 20 to 30 years ago. The Polish military is currently in the process of testing all of their installations for POL contamination at a cost of between \$40 to \$50K US each. At several former Soviet bases, contamination is so bad that one foot layers of POL deposits, spanning 406 hectares, have been recorded in the soil covering ground water. The military is facing financial constraints in their effort to identify and cleanup polluted bases. The threat from this type of pollution became evident in the case of an underground water tank on a base near the town of Pila. The tank was nearly contaminated from POL deposits in the ground, however, quick identification, assessment, and cleanup of the situation prevented potential disaster.

The Polish military wants to take a proactive role, rather than a reactive role. Levels of water pollution on military bases have been identified. Of the existing 300 wastewater facilities, approximately 50% need to be renovated and another 100 more need to be built. Currently, restructuring of the Polish Armed Forces is occurring affecting approximately 230,000 active soldiers. Within the environmental arena, the ultimate goal of the Ministry of National Defense is to allocate one person per battalion with the sole responsibility of monitoring environmental programs. Unfortunately, the Former Soviet Union offers no support or compensation. One

condition for their withdrawal was that Poland would never make any claims for environmental damages.

Internal conflicts have risen with more and more education being available to Poles regarding the environment. Political activist groups such as the Polish Ecological Club are gathering momentum in their pursuit of environmental cleanliness and regulation. External funding from foreign sources has grown considerably over the past decade. Education of environmental issues to the general public has been an ongoing initiative of the Club through the form of books, pamphlets, and awareness presentations. The Green Party, with the support of the Polish Ecological Club, has been instrumental in halting construction of various environmentally-unsafe projects and pushing new legislation through protests. During the mid 1970's, the Polish government began construction of a nuclear power plant in the city of Zarnowiec using Russian technology. Construction of the plant was halted with only 60% completion due to protesters. After long negotiations, construction resumed with the plant eventually being converted to gas operation.

For many decades, Poland was surrounded by only three neighbors: Czechoslovakia; East Germany; and the U.S.S.R. Today, the demise of the Former Soviet Union has resulted in Poland having seven neighboring countries surrounding her borders which include: Germany; Czech Republic; Slovak Republic; Ukraine; Belarus; Lithuania; and Russia. Currently, Poland has to contend with potential international conflicts in the environmental arena with these seven neighboring nations. The current relationship with these seven nations has been strengthened through negotiation and implementation of new bilateral agreements concerning water management and pollution, nature protection, and air pollution control. In 1992, a new agreement regarding the protection of "Frontier Waters" was signed with Germany. The main purpose of this agreement was to ensure that pollution control measures would be adopted by both nations with regards to inland waterways, ground water reserves, and emergency response to potential incidences of transfrontier pollution. An intergovernmental agreement signed in 1958 with the Czech and Slovak Republics (then Czechoslovakia) is still binding regarding water management issues. In 1991, Poland was awarded compensation for accidental oil pollution in the Oder River which occurred in 1986. Bilateral agreements were signed with the U.S.S.R. in 1989, and Ukraine in 1994. Currently, cooperation with Lithuania is based on an agreement between the Environment Ministers of Lithuania and Poland. Over time, closer relationships between Poland and its eastern neighbors should develop.

Poland has made significant strides in its battle against environmental pollution, however, funding restrictions play a major role in the level of progress it can make. Foreign investment needs to continue for Poland to reach the level of westernized countries, both economically and environmentally.

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Panel 6: REGIONAL SECURITY (Europe)

Cadet First Class Jason Arnold, USAFA Cadet Squadron 34

--NATO Enlargement--Issues and Answers

Dr. Charles Krupnick, USAFA Military Arts and Science

--The Emerging OSCE Role in Europe's Security Architecture

Capt Stephen P. Lambert and Capt David Miller, Naval Postgraduate School

--US Nuclear Weapons in Europe: Current Environment and Prospects for the Future

Capt Steven R. Drago, USAFA Military Arts and Sciences

--Three Reasons Why the United States Still Needs NATO

Executive Summary

NATO Enlargement -- Issues and Answers

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Abstract

There is still serious debate, even with the Atlantic Alliance itself, about the merits of enlargement. Make no mistake about it: NATO will enlarge. But questions about the purpose of enlargement, what the Alliance will look like afterwards, Russia's outspoken opposition and possible membership, the substance of security guarantees to be offered to new members, criteria for admission, when enlargement might occur and its associated costs, which nations are the leading candidates and NATO's ultimate size, NATO's command structure and nuclear posture, and the confirmation process itself are still being asked. We are unaware of any attempt to bring all of the current issues to the table and the conventional wisdom associated with each of them. This paper raises the most important questions concerning NATO enlargement and shares the conventional wisdom.

Introduction

Failure of the North Atlantic Treaty Organization to expand could mean a loss of public support in NATO member nations and a slow lapse into irrelevance, while expansion offers revitalization and enhanced relevance in Europe's emerging strategic landscape. In our minds, these two very different outcomes are justification enough for NATO enlargement. After all, who better to address the problems of the new Europe than the Western democracies? Expansion will happen -- it is only a matter of when. By some accounts, with the more or less successful reunification of Germany, expansion has already happened. What are the major issues associated with enlarging NATO, and are there answers to the questions they raise?

The Purpose

An opportunity to strengthen democracy and enhance prosperity in the newly-free Central and Eastern European nations exists today, and expanding the European Continent's community of established democracies must become NATO's top priority.

In addition to engendering political confidence and identification with the West, NATO envisages the enlargement process will contribute the following to new members:

- democratic reforms, including civilian and democratic control over the military
- habits of cooperation, consultation and consensus building
- good neighborly relations
- less likelihood of an exclusively national approach to defense policies
- integration and cooperation based on shared democratic values

While certainly significant, the current strategic reality actually permits a much larger vision. With the end of the Cold War, a unique opportunity exists to build an improved security architecture that provides increased stability and security for all nations in the Euro-Atlantic area, without recreating dividing lines - but no one is leading the way. In fact, both the EU and the WEU are recreating dividing lines in Europe by stalling the entry of new members and by effectively deciding -- unilaterally -- which nations of Europe are fit for integration into the West. NATO enlargement coupled with a strong and vibrant Partnership for Peace program, on the other hand, promises greater inclusion and the elimination of divisions between all interested and willing parties. The time is right for NATO enlargement.

NATO After Enlargement

NATO must forge a new vision of its core purposes and missions. The Alliance must transform itself from a traditional military alliance into an organization for addressing Europe's new security challenges: maintaining the capacity for territorial defense, but at the same time placing greater emphasis on contingency force projection. NATO must become an organization of both collective defense and conflict prevention. As such, the Alliance can be expected to take on new responsibilities in the area of crisis management throughout Europe, drawing hard lessons from its failure to act with more determination and purpose in the former Yugoslavia.

There are currently three forms under which NATO Allies contribute to NATO collective defense. However, we believe that only the first -- full participation in the integrated military structure and the collective defense planning process -- should be offered to new members. But regardless of which form participation takes, the forces of new members are expected to participate in the entire spectrum of Alliance missions to the extent appropriate to their capabilities, taking into account the need for case-by-case consideration of non-Article 5 missions.

After enlarging, the Alliance must ensure that it maintains its ability to make important decisions quickly. All decisions made in NATO bodies are expressions of national sovereignty and are therefore achieved through consensus. If there is no consensus, there are no decisions. If there are no collective decisions, there is no collective defense. NATO is only as strong as the consensus of its members--without the ability to reach consensus, the Alliance cannot commit. So instead of hindering the consensus process, enlargement should better enable the Alliance to carry out both its core functions and its new missions.

Russia

Although NATO maintains that no nation will exert a veto over its enlargement, it is generally acknowledged as unproductive to enlarge the Alliance to enhance security while at the same time potentially destabilizing the region by alienating Russia. However, a negative Russian reaction is probably unavoidable, because for many Russians NATO still has an anti-Russian flavor to it -- they view it as an Alliance directed against them. The changing landscape calls for a Europe in which a democratic Russia has its rightful place. Thus, while NATO responds to the legitimate expectations of Central Europe to be integrated into a Euro-Atlantic security structure, it should also be building a strong, lasting NATO-Russia relationship. NATO fully intends to renew and extend cooperation between Russia and the Alliance beyond the Partnership for Peace program, and both NATO and Russia have agreed to pursue a broad, enhanced dialogue. NATO is prudently avoiding any formal treaties with Russia that places itself in the position of having to coerce Russia to take certain actions. NATO and Russia appear to making headway in establishing a strong, stable and enduring partnership that properly recognizes their common interests in security and cooperation on the European continent.

Security Guarantees -- What Does It Mean?

The Ukraine plans to seek associate membership in NATO when the Alliance expands. While it has no desire to actually gain full membership, the Ukraine aspires to formalize relations between itself and NATO in the form of a "special partnership." Notwithstanding the Ukraine's request, the Alliance has rejected appeals for less than full membership. Though suggestions have been made to support requests such as that of the Ukraine, full membership is deemed essential to maintain collective defense. Anything less may be perceived as a "paper guarantee."

Criteria for Admission

NATO's refusal to issue a rigid list of criteria is consistent with past member accessions. No additional criteria beyond article 10, which states only that a potential member should be "...in a position to further the principles of this Treaty and to contribute to the security of the North Atlantic area..." were specified

when Greece and Turkey joined NATO in 1952, when Germany joined in 1955, and when Spain joined in 1982. To specify additional criteria now would be to go beyond past precedent, and some might accuse NATO of having double standards. Active participation in PfP is expected to play an important role in preparing countries for accession, but it will not guarantee Alliance membership. In the end, the Alliance must walk a fine line between setting expectations for new members too low to be meaningful or too high to be unachievable.

The Who

Stated in its simplest terms, "the who" will be a political decision. Senator Bob Dole has called for the admission of Poland, Hungary and the Czech Republic. The nations he cites are on the "short list" of virtually everyone who endorses NATO expansion, and verbalizing the potential of these nations to become members builds a general expectation that will lessen any negative reaction on the part of Russia as well as prepare those nations who are not admitted with the first wave for rejection. "Second tier" candidates include Slovenia and Slovakia. Romania is considered a "dark horse" -- a strong participant in PfP, but still plagued with political problems.

Timing of Admission

In all probability, the Alliance will specifically address the enlargement process at its next Ministerial meeting in December of this year. It is doubtful that specific names and dates about which new members will be asked to join will emerge from the gathering; such an important decision more appropriately lies with NATO's government leaders. Nevertheless, we should anticipate that an announcement will be issued confirming that "the who and the when" will be decided by the Allies in the near future. Speculation on the exact timing for new members to enter NATO centers around April of 1999, NATO's 50th anniversary. This symbolic date provides an opportunity that many are reluctant to pass up to make such an historic change in the nature of the Alliance.

Subsequent Waves -- Who and When

The Alliance should make clear that enlargement is expected to be an evolutionary process that will continue indefinitely. In the meantime, Partnership for Peace must be maintained, enhanced and deepened not only as a stand-alone instrument of European security, but as the gateway to a larger NATO.

How Big is Big Enough?

There are concerns that NATO would evolve from a security organization into primarily a policy organization if it were to expand beyond some "magic" threshold. A common world-view is unlikely in a large community of nations, and it can be argued that commonality cannot be maintained in an organization of too many members. Therefore, a safe estimate calls for limiting the size of NATO to no more than about 25 countries.

Will Russia Ever Join?

The following arguments have been or could be used to exclude Russia from membership:

- Russia is not a North Atlantic or European state
- Russia is too large
- Russia is too unstable
- Russia might not be willing to compromise to reach consensus
- Membership would give Russia a right of veto within NATO
- NATO would find it difficult if not impossible to consider extending NATO security guarantees to Russia due to its large border

Certainly, any new command structure would have to be huge to absorb Russia's size, and the addition of Russia could reorient NATO overnight toward events in China and the Pacific. It has also been

argued that Russian membership might remove NATO as the shield of Western Europe, since NATO obligation does not run to protecting its members against each other. But if Russia does not fit into any existing organization, then a new Russia-NATO forum must be created to respect Russia's status and to lessen the perception that expanding NATO eastward is an anti-Russian strategy. The ultimate goal of this forum should be to reach a point where Russia's membership in NATO doesn't matter, because both are working so closely together.

The NATO/EU/WEU Link

So strong are NATO/EU ties that the Alliance has categorized enlargement as a parallel process designed to complement expansion of the European Union. Though the two organizations are expected to enlarge autonomously, each organization will consider developments in the other during the process. The link between enlargement of NATO and enlargement of the EU serves four primary purposes. The first is that concurrent expansion invigorates the efforts to promote stability eastward. Second, the European Union can provide what Central Europe needs most: economic growth and political integration into Western Europe. Third, using the EU as one of the primary vehicles for the westward integration of Central Europe minimizes the risk of a backlash in Russia. And most importantly, it provides for common memberships in NATO and the WEU.

U.S. Role After Enlargement

The current U.S. administration views NATO as the foundation of American policy in Europe and identifies it as the essential organization for peace on the continent. NATO's Chairman of the Military Committee has said that there is no European security without the U.S. and that the transatlantic link serves the interest of both sides of the Atlantic since there will always be a need for coalitions. Consequently, the U.S. must remain an European power and help its NATO Allies to forge a strategic vision for the future in its traditional role as leader of the Alliance.

The Cost

If NATO decides to configure new members' forces only in the areas of C3I and logistics support, the cost of enlargement will be relatively low. If new members are permitted to contribute strategic position rather than strategic forces -- as did both Iceland and Spain -- then costs can be driven much lower. Current cost projections we have seen in the literature seem to indicate that NATO plans to build a new Maginot Line, and that is clearly not the case.

Perhaps the most attractive option available to the Alliance involves improving the existing militaries of new members by upgrading them sufficiently where integration with NATO air defenses, logistics organizations and communications networks is feasible. Such an option capitalizes on the ability of NATO's in-area assets to extend their umbrella eastward while still operating from bases in Western Europe and would involve few costs in the short term.

So-called baseline improvements for Poland, Hungary, the Czech Republic and Slovakia alone are estimated to cost about \$60.6 billion. But if \$60.6 billion is a reasonable figure to pay for expansion and the new members can be expected to pay for at least 20% of the total, what are the implications? Joining NATO may cost these countries just under 0.5% of their GDP each year for 10 years -- and this figure does not include other financial obligations they will owe to the Alliance. Expecting these nations to now increase their defense budgets by fully one third is in our view unrealistic in the short term.

We therefore believe that NATO should require the configuration of new members' forces only in the areas of C3I and logistics support, while permitting the gradual integration and modernization of the rest of their military capabilities over an extended period of time.

The Confirmation Process in NATO Capitals

If NATO drags out the ratification process, especially with regard to the first accession of new members, then its failure to act quickly could be interpreted that the West is unsympathetic to the Central and

Eastern European states and views them at best as unimportant and at worst as "outside of Europe," undercutting reform in the new democracies. Consequently, we believe that ratification of the first *trenche* will take place at a steady pace in NATO capitals once invitations are issued and negotiations for entry are completed.

PRP/PARP/NACC After Enlargement

NACC/PfP will continue to provide the fundamental framework for developing relations with partner countries. PfP is expected to play an important future role both to help prepare new members and as a means to strengthen relations with partner countries unlikely to join the Alliance. NACC is expected to play a significant role in establishing confidence building measures between NATO and its cooperation partners. Ultimately, NATO's goal for PfP should be to offer to its new partners all the benefits of membership except a security guarantee and a vote at the table -- to treat them the same as NATO members on a day-to-day basis in both political and military cooperation. Partners must be made to feel that they are important and special to the West, and they should be brought to a point where they are as close to a security guarantee as is possible in the current political climate. It has been suggested that Russia might reject a continued role in PfP. However, it is in Russia's best interests to be integrated into the larger community of nations and resist its tendency to "turn east." Through PfP, Russia has an historic opportunity to join the larger community of industrialized democracies and to emerge from the isolation that characterized its international role during most of this century.

Crisis Management in a Bigger NATO

NATO's most pressing current priority is the Implementation Force (IFOR) operation in Bosnia. This past spring was the first in 4 years without a major military offensive, and NATO led the Implementation Force that both built and kept the peace in that area. But the significance of IFOR has the potential to transcend Bosnia. It proves that NATO can effectively manage crises that affect the whole of Europe, while inspiring an extraordinary and unprecedented spirit of cooperation.

The Command Structure

Ideally, NATO's new command structure would include CJTF implementation and make theater missile defense happen in a single multinational structure. We believe it is axiomatic that the final command structure should be a structure flexible enough to absorb the effects of future enlargements, as NATO cannot be reinventing its command structure every time a new member joins the Alliance.

Nuclear Posture

NATO's current nuclear posture will, for the foreseeable future, continue to meet the requirements of an enlarged Alliance, and there is no need to change or modify any aspect of NATO's current nuclear posture or policy.

Conclusions

The time is right for NATO enlargement. It is an idea consistent with the historic pressures of the times and offers the Alliance revitalization and enhanced relevance in Europe's emerging strategic landscape. The most monumental task facing the West since the Cold War, NATO enlargement represents the true spirit of the emerging international order: the removal of dividing lines, the evolution of cooperation, and the joint maintenance of regional stability to mutual benefit. Although the lingering distrust between Cold War enemies and the inherent problems caused by conflicting priorities promises to be a source of contention between members, it can be expected that the new NATO will renovate European security and ultimately redefine the nature of the trans-Atlantic relationship.

Executive Summary
The Emerging OSCE Role in Europe's Security Architecture
Charles Krupnick

History

The CSCE (now OSCE) grew out of Soviet proposals in the 1950s to sanctify post-World War II European borders. The negotiations that followed led to the CSCE Final Act, signed in Helsinki in August 1975 by members of NATO, the Warsaw Pact, and other European countries. In addition to recognition of borders, the signers agreed to standards of cooperation in economic, environmental, cultural, and humanitarian issues. With subsequent conferences and agreements, the CSCE gradually developed three core functions (according to Victor-Yves Ghebali): to facilitate the peaceful settlement of disputes; to encourage disarmament; and, to establish Confidence and Security Building Measures (CSBMs).

The OSCE Today

When the Cold War ended in 1990/1991, many hoped that the CSCE would become the dominant organization of Europe's new security architecture. Enthusiasts were thwarted, however, by the objective realities of the period, such as the war in the Persian Gulf and the manifest instability of Central and Eastern Europe -- evident from the breakup of Yugoslavia and the Soviet Union. Moreover, the United States was reluctant to support a new multinational forum where its influence would be nominal and whose growth might reduce the role of NATO. Consequently the CSCE has been strengthened and institutionalized only modestly since the end of the Cold War, adding a permanent secretariat, a Secretary General, a Permanent Council, and a Chairman in Office, with activities conducted primarily in Vienna, Austria. None of the new bodies have much authority on their own, confirming the CSCE as a quintessential intergovernmental organization.

The CSCE has since established a working relationship with NATO whereby the alliance can conduct crisis intervention operations on behalf of the CSCE. It has also become a UN-sanctioned regional security organization. On 1 January 1995, the CSCE changed its name to the Organization for Security and Cooperation in Europe (OSCE) to reflect its somewhat more institutional status. The organization is a convenient venue for vetting a wide variety of security-related issues, particularly in arms control and CSBMs, and gives all the nations of Europe (including Asian countries from the former-Soviet Union) at least some role in regional security deliberations.

The Missions

The OSCE might actually be more consequential in its field work. With the Dayton peace agreement, for example, the OSCE was given the major responsibility of supervising the September 1996 elections in Bosnia. It also has missions in the Republic of Georgia, Moldova, Tajikistan, Estonia, Latvia, Macedonia, Ukraine, Bosnia, and Chechnya. Each mission has a unique mandate and purpose, but shares the object of preventive diplomacy -- to take action before differences or conflicts of interest become violent.

In Latvia, for example, the OSCE was tasked with helping to construct a law that would provide appropriate and fair means for non-Latvian speakers to gain citizenship -- over 40% of the country's residents are Slavic (primarily ethnic Russians) and do not speak Latvian (a difficult Indo-European language). With the law now passed, the OSCE is trying to ensure it is fairly implemented. Equitable treatment of Russians in Latvia is important for humanitarian reasons, but has significant security implications as well because of Russia's proximity and mixed attitude toward Latvian independence. Mission diplomats in Latvia conduct surveys and interviews to ensure there are no patterns of abuse in administering citizenship requirements. The OSCE also monitors the status of military pensioners from the old Soviet armed forces and the "temporary operation" of the Russian-manned Skrunda radar complex. The mission appears successful in fulfilling its charter, but faces new challenges: for one, Latvian officials seem inclined towards not renewing the OSCE mandate; and second, few Russian-speakers are applying for citizenship under the new law, suggesting that the current two classes of residents -- ethnic-Latvian citizens and Slavic non-citizens -- may become a permanent condition.

So What is the OSCE?

The OSCE is a very weak security regime -- certainly not a collective security organization in any real sense nor an institutional rival for NATO or the EU. On the other hand, its flexible charter makes possible a variety of tailored activities under a multinational umbrella while its intergovernmental nature permits OSCE diplomats to use home country resources to achieve OSCE goals. In practice this means that Western countries, the only ones with assets to spare, have a great deal of influence in the agenda and operation of the OSCE. This is used to help encourage Western concepts of governance and security in the countries emerging from communist rule, but may also be seen as encroachment on traditional rules of sovereignty.

The OSCE might also be viewed as an "intergovernmental NGO." Similar to non-governmental organizations (NGOs) like the International Red Cross, it pursues solutions to grassroots problems -- such as language training and refugee relocation -- and sometimes even cooperates with NGOs themselves. Its people-level activities, while parsimonious in the grand scheme of security activities, may in the long run be as important as the more visible decisions of Vienna and Brussels.

Prospects

The current OSCE review conference will lead to a December 1996 summit of member heads of state and government in Lisbon, Portugal. There is no expectation that the OSCE will strongly increase its relative position in Europe's security hierarchy. It will not, for example, get legal (treaty) status nor a UN-style security council. There is some chance that the secretariat and Secretary General will be modestly strengthened -- this makes good sense for the periods when the Chairman in Office (the head of the Permanent Council and titular leader of the OSCE) is held by a weak and poor country -- but significant advances are unlikely. The conference will also review a draft "common/comprehensive security model for the twenty-first century" insisted upon by Russia, but again no earthquakes are expected. The really important changes to Europe's security architecture could occur in spring 1997 when NATO will make decisions on enlargement and when the EU will likely complete its current intergovernmental conference.

Until then the OSCE will be waiting in the wings, continuing its low-key but surprisingly useful preventive diplomacy.

U.S. Nuclear Weapons in Europe

The Current Environment & Prospects for the Future



Stephen P. Lambert
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Executive Summary

Introduction. Since 1991, Dual Capable Aircraft (DCA) and associated nuclear gravity bombs have comprised the remaining U.S. non-strategic nuclear forces (NSNF) in Europe. The United States Air Force is the sole remaining branch of the U.S. armed forces with custody of European-based nuclear weapons.

Although the Cold War appears to be rapidly fading from memory, nuclear weapons will remain part of the fundamental decision-making calculus of the major powers. Western political and strategic elites have nonetheless experienced difficulty as well as ambivalence in articulating future roles for nuclear weapons.

This work is divided into two major parts. Part I presents a review and analysis of the current security environment in Eurasia. With due attention to nuclear policy issues, it examines the following four topics: (1) the Russian Federation and its significance for the future security of the Eurasian area; (2) the threat of the proliferation of Weapons of Mass Destruction (WMD) in the Atlantic and Eurasian region; (3) the nuclear and security perspectives of the Western European powers; and (4) the perceptions and concerns of states on NATO's Southern Flank. Part II evaluates the implications of four major scenarios for the future of U.S. nuclear forces in Europe: (1) the continuation of the Nuclear Status Quo, (2) a Unilateral Withdrawal, (3) the emergence of a Western European Nuclear Identity, and (4) an Air-Delivered Nuclear Forces Regime.

Part I

The potential withdrawal of U.S. nuclear forces from Europe raises critical questions with regard to Eurasian stability, U.S. security guarantees, and NATO nuclear policy. In the future, the retention of nuclear weapons in smaller, but still significant numbers (but not necessarily in Europe), will remain a prudent and positive element in the construction of a dependable international system for preserving peace.

The Russian Federation. The collapse of the Soviet empire has imparted a severe shock to Russia, directly affecting its ability to meet its security needs. The Russian military is likely to suffer from conventional force deficiencies for the foreseeable future. Nevertheless, the renunciation of the Soviet doctrines of defensive sufficiency and no-first use, and the principles in the October 1993 military doctrine point toward enduring Russian extra-territorial concerns and aspirations. Nuclear weapons will probably play an increasing role in the rhetoric, operational capabilities, and doctrine of Russian military power. As a result of these and other factors, in the future Russia is likely to act as a Eurasian hegemonic power, pre-occupied with asserting a *droit de regard* in its sphere of influence, constrained by domestic fissures and economic challenges, and motivated by enduring, geostrategic security perspectives.

Proliferation and the Atlantic Alliance. NATO's declaratory nuclear doctrine affects the proliferation regime in differing ways. Alliance nuclear weapons do not seem to deter the *acquisition* of weapons of mass destruction by those states with interests inimical to the United States and NATO. NATO's nuclear weapons may occupy a role in deterring WMD *employment* by enemy states or actors. However, the receding role of nuclear weapons in Alliance doctrine,

combined with NATO's faith in conventional military power, is fostering doubt as to the willingness of the Alliance to posture and employ nuclear weapons.

Nuclear Perceptions and the Western Core. NATO's current nuclear posture enjoys a high degree of support among officials and politicians of the major European countries. Indeed, European Alliance members are concerned about any further erosion of U.S. nuclear forces and would consider their removal most troubling. In the present environment, the creation of a multinational European deterrent is unlikely, especially as this would be seen as endangering the continuing presence of U.S. nuclear weapons. Furthermore, to the extent that officials in Western Europe discount the feasibility and credibility of a multinational deterrent, they are unprepared for any such eventuality in the future.

Nuclear Perceptions on the Southern Flank. Among the Alliance countries most directly exposed to the threats on NATO's southern boundary, support for NATO's nuclear posture is high, but not uniformly so. In Greece and Italy, to a large extent, participation in Alliance nuclear affairs is seen as a means of enhancing the national image as a good ally. In Turkey, NATO's nuclear posture is considered an essential aspect of national security. Most significantly, in light of security motivations for nuclear protection and the lack of EU or WEU fallback positions, if Turkey perceived itself to be unprotected, there is a good chance that it would strongly consider a national nuclear program.

Part II

Scenario #1: The Nuclear Status Quo. Four sets of issues raise concerns regarding the enduring presence of U.S. nuclear weapons in Europe.

First, the future reliability, safety, and credibility of the U.S. nuclear stockpile are uncertain due to several key factors: (1) the unproven viability of the Scientific Stockpile Management Program (SSMP), (2) the current and long-term inefficiencies and gaps in the Department of Energy's (DOE) stockpile surveillance program, (3) the persistent failure to establish a new tritium production source, (4) DOE's inability to adequately fabricate plutonium components, and (5) the substantial budgetary shortfall for the SSMP and stockpile surveillance programs, as a consequence of current budgetary priorities. These factors will affect the entire stockpile, including the single remaining U.S. nuclear weapon in Europe (the B-61 gravity bomb). This is not lost on European Alliance members today.

Second, NATO's ongoing inertia in nuclear declaratory doctrine and nuclear force posture (modernization) will influence the long-term political and military viability of NATO's nuclear deterrent.

Third, although not necessarily credible with most politicians and policy elites, no-first-use proposals and nuclear weapons delegitimization efforts are increasingly capturing the public spotlight.

Fourth, and finally, the impending debates regarding nuclear weapons in light of NATO enlargement will focus renewed and possibly unwelcome attention on NATO's nuclear weapons in the future.

Scenario #2: A Unilateral Withdrawal. Public opinion following a dramatic event involving nuclear weapons would be unpredictable and possibly difficult to influence. For example, a nuclear accident (involving either non-military or military nuclear applications), a security breach at a nuclear weapons facility, or the targeting of a NATO nuclear storage facility in a regional, non-nuclear conflict could have far-reaching effects. A domino effect, starting with such a nuclear surprise, could lead to mass protests and end with a loss of political support for the retention of U.S. nuclear weapons in Europe.

In this event, alternatives such as *reconstitution* or *substitution* might help to mitigate the damage to NATO's deterrent capabilities caused by unilateral withdrawal of U.S. nuclear weapons. In addition, reassurance schemes might enhance the credibility of these alternative postures. These schemes include: increased emphasis on the importance of NATO's nuclear decision making process, increased Allied participation in U.S. nuclear decision making staffs (e.g., NATO representation at STRATCOM, the Joint Staff, and/or the OSD offices that deal with nuclear issues), or Allied participation in the manning of offshore nuclear systems.

In all respects, however, *thinking* about how NATO might deal with the consequences of a unilateral withdrawal, an event that might be forced on NATO by a dramatic incident, is a more sensible approach than *hoping* a unilateral withdrawal will not occur.

Scenario #3: A West European Nuclear Identity (WNI). The creation of a multi-national European nuclear deterrent would probably come after the withdrawal of U.S. nuclear forces from Europe, and would encounter the fewest obstacles if created within NATO, instead of within an EU or WEU forum. NATO would be a better framework due to its already established nuclear "risk- and responsibility-sharing" and consultation mechanisms. In terms of the credibility of a WNI deterrent, while the quantity of weapons available might be sufficient, the real challenge would be to demonstrate a willingness to use that force. Furthermore, any Alliance member that is not convinced that its security is adequately assured by a WNI would strongly consider acquiring nuclear weapons, notwithstanding any prior international agreements. In view of the premium they attach to current U.S. nuclear guarantees, this point especially applies to Germany and Turkey.

Scenario #4: An Air-Launched Nuclear Forces Regime (ANF). The most innovative of the four scenarios, this option examines the implications of an arms control regime that might address several security issues affecting NATO today and in the foreseeable future.

First, Russian nuclear weapons still pose a threat to NATO and the United States, for the following reasons: (1) the risk of premature weapons release by Russian commanders during times of tension (as a result of pre-delegation of nuclear launch codes and authority), (2) the Russian doctrinal emphasis on lowering the nuclear threshold to the tactical, theater, war-fighting level, (3) the risk of a crisis in the Russian nuclear infrastructure as a result of the overwhelming stockpile stewardship demands and the lack of adequate weapons storage facilities and security measures, and (4) the risk of theft or sabotage against Russian tactical nuclear weapons by terrorists or misguided insiders.

Second, NATO's nuclear doctrine continues to rely on concepts formulated during the Cold War that may no longer be valid in a multi-polar environment. Furthermore, Western arms control efforts suffer from a deep-seated orientation toward concentrating on strategic, counter-

force systems—ironically, those with the most effective security arrangements. Efforts to include NSNF in arms control regimes have been persistently neglected, except for the INF treaty.

Unprecedented in its scope, the proposed ANF regime would use arms control measures to increase security, transparency, and confidence in the Eurasian area. The proposed ANF regime would canton, reduce, and eliminate U.S., Russian, and ultimately, French air-delivered nuclear weapons—that is, it would limit, reduce, and destroy *not delivery systems but actual warheads*. Specifically, the ANF regime would include four stages. Stage One would be tasked with achieving transparency regarding the technical and scientific issues involved in implementing the regime as a whole. Stage Two would address stockpile stewardship and weapons security. Stage Three would involve a three-phased process: (1) asymmetric reductions to equal numbers, (2) further deep reductions to low thresholds, and (3) weapons category elimination. Stage Four might encompass eliminating other classes of nuclear warheads.

A potential ANF regime would face substantial obstacles. These challenges include, but would not be limited to, the following areas: (1) technical hurdles, including verification and detection, (2) the political challenges involved with persuading France to participate in a nuclear disarmament treaty, (3) complications with the START treaties as well as changes to the nuclear triad, and (4) the potential consequences of sometimes unpredictable Russian motives. It should be emphasized that the ANF regime would not be pursued as an incentive to persuade the Russians to accept NATO enlargement. Instead, the implementation formula with regard to NATO enlargement and the ANF regime would be “separate but parallel.” Taken as a whole, the ANF regime might increase NATO’s security by raising the nuclear threshold, countering the Russian interest in a nuclear warfighting doctrine, and ensuring that the remaining fissile material is appropriately disposed of and not recycled into further weapons production.

Conclusions. As a consequence of the end of the Cold War and efforts to build new political relationships with former adversaries, the Alliance’s primary function—that of collective defense—is being de-emphasized. NATO’s nuclear weapons are increasingly portrayed as serving *tous azimuts* functions, and their enduring relevance is no longer clear. Instead of emphasizing the Article 5 commitment in the Washington Treaty, NATO is moving toward a strategy of selective engagement, whereby Alliance members will opt in or out of future operations (e.g., peacekeeping and humanitarian relief) based on their own national interests. In some ways this may seem inevitable as the Alliance adapts to the new international environment. However, as one NATO official has asked, “if collective defense is relativized, what role will nuclear weapons play in the future?”

Except for issue areas such as nonproliferation, nuclear testing negotiations, and cooperative threat reduction, nuclear weapons within the Atlantic Alliance have been given relatively little attention since the end of the Cold War. The malaise is multi-dimensional—nuclear policy-making staffs have been sharply reduced, positions are being down-graded, and the corporate knowledge base is fading. Years of vigorously debated and carefully articulated policy have been succeeded by a mood of ambivalence and wishful thinking. Reflecting on potential Russian reactions to NATO enlargement and its nuclear implications, one senior NATO official recently commented that “our *hope* is that they will grumble with, but accept enlargement.” As

a different official observed, "NATO is taking the ostrich-with-its-head-in-the-sand-approach to nuclear policy."

While NATO may be *hoping* that nuclear issues do not come to the surface, this is not a sustainable position. The United States and its NATO Allies are on the verge of major new policy debates regarding nuclear weapons and nuclear arms control in Europe. Policy makers can continue to avoid nuclear issues and run the risk of eventually being overcome by events external to the alliance—or, they can choose to meaningfully address the nuclear weapons challenges and arrive at constructive solutions. If the eventual result of this process involves a withdrawal of the remaining U.S. nuclear weapons from Europe, vigorous deliberations with active U.S. engagement would maximize the chance that such a withdrawal would occur in a manner consistent with Alliance interests. As the Eurasian security environment evolves, a withdrawal of the remaining U.S. nuclear weapons cannot be dismissed.

Regardless of the future direction that policy makers choose, the current NATO nuclear posture is not indefinitely sustainable. The nuclear calculus in the European security equation is changing, and NATO decision makers must prepare to engage the process for the future. Alliance members should pursue a focused effort to establish an internal NATO consensus and to educate the public—prior to the enlargement debate and any impending arms control initiatives. In this manner, the Alliance will define the future of its nuclear weapons posture based on its own security requirements, not on reactions to moves made by other actors seeking to capitalize on NATO's current aversion to addressing nuclear issues publicly.

Executive Summary of Research Report

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Executive Summary on: "Three Reasons Why the United States Still Needs NATO:
Regional Stability, Deterrence, & Crisis Response"

The central thesis of the paper is that continued participation in NATO is essential for the United States to achieve its security objectives in Europe. A major premise of the paper is that in order to address specific issues such as continued US participation in NATO, it is first necessary to articulate America's overall national security, national military, and European theater strategic goals. Therefore, the first methodological step of the paper is to address the issue of US participation in NATO in the broad contexts of the published National Security Strategy, National Military Strategy and EUCOM's theater strategy documents. The paper briefly traces the underlying logic of the three-phase link between (1) the national security objective of expanding free-market democracies abroad to (2) the national military strategy objectives of promoting stability and thwarting aggression to (3) EUCOM's three strategic concepts of Engagement in Peacetime, Fight to Win, and Crisis Response.

Second is an examination of the major threats and issues associated with the following three categories of operations derived from EUCOM's three strategic concepts: (1) Regional Stability, (2) Readiness & Deterrence, and (3) Crisis Response. The three

major threats to regional stability are identified as (a) war in Eastern Europe, (b) war involving Western Europe, and (c) nuclear proliferation. The major concern in the area of deterrence is the possibility of a resurgent, revanchist threat emanating from the area of the former Soviet Union. Crisis Response is important both within and outside of EUCOM's Area of Operations (AOR).

After discussing each of the major issues in these three main categories, the third step is to use these three categories as a framework for analyzing the utility of America's continued commitment to NATO. This is the section of the paper that examines how NATO can enable the United States to achieve EUCOM's three major strategic concepts.

Fourth, the author offers some modest recommendations about how our policy-makers can both retain US influence in the region and at the same time reduce the costs of US defense contributions to NATO. With respect to retaining influence, the author discusses why it is necessary for the US to maintain influence in Europe. One of reasons that US leadership is necessary in the international system is to overcome the problem of providing "collective goods" in the context of the European security landscape. With respect to reducing US defense contributions to NATO, the paper examines two basic ideas. The first idea, advocated by Olson and Zeckhauser is to achieve marginal cost-sharing schemes. The second idea, articulated by Gates and Terasawa, is to attempt to increase European perceptions of US defense contributions while also channeling resources into assets that provide both "private and public" benefits. The paper uses these generic ideas to generate specific proposals for US forces in Europe.

Panel 7: REGIONAL SECURITY (Asia)

Lt Col Melvin E. Richmond, Defense POW/MIA Office
--US National Interests in the Socialist Republic of Vietnam

Maj Philip A. Smith, Naval War College
--The Dragon's New Teeth: China's Future Unmanned Air and Space Forces

Capt Robert L. Cummings Jr., 34th Airlift Squadron, Japan
--The Taiwan Independence Movement

Ms. Sharon Richardson, Olin Foundation
--Korean Unification: Probable, but Not Predictable

ABSTRACT

AUTHOR: Melvin E. Richmond, Jr. (LTC), USA

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A major paradigm shift has occurred in Southeast Asia. Once known as a center of instability, conflict and poverty, the countries of Southeast Asia are emerging into global prominence. Some of the most dramatic shifts occurring in Southeast Asia are in the Socialist Republic of Vietnam. Since the end of its involvement in the conflict in Indochina in 1975, the U.S. has predicated its relations with Vietnam almost entirely on accounting for more than 2,000 Americans still missing as a result of U.S. involvement there. If the U.S. is to retain its influence in Southeast Asia, it must now base its relations with Vietnam on realistic national interests rather than on an emotional issue on which significant progress has already been made. The U.S. has significant national interests in Vietnam to include: the security of U.S. allies, the non-proliferation of weapons of mass destruction, the enhancement of regional stability, cooperation on counter-narcotics activities, access to markets and raw materials, security of sea lines of communication, promotion of free-market economies, success of emerging democracies, protection of U.S. citizens abroad, achievement of the fullest possible accounting for unaccounted-for Americans, and promotion of human rights. This paper analyzes each area and recommends policy positions to achieve/protect these interests.

*Three Reasons Why the United States Still Needs NATO:
Regional Stability, Deterrence, & Crisis Response*

by

Steven R. Drago

Abstract

The central thesis of this paper is that continued participation in NATO is essential for the United States to achieve its security objectives in Europe. The author approaches this thesis in four analytical steps. The first step is to address the issue of US participation in NATO in the broad contexts of the published National Security Strategy, National Military Strategy and EUCOM's theater strategy documents. Second is an examination of the major threats and issues associated with the following three categories of operations derived from EUCOM's theater strategy: (1) Regional Stability, (2) Readiness & Deterrence, and (3) Crisis Response. After discussing each of these issues, the third step is to use these three categories as a framework for analyzing the utility of America's continued commitment to NATO. Fourth, the author offers some modest recommendations about how our policy-makers can both retain US influence in the region and at the same time reduce the costs of US defense contributions to NATO.

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THE DRAGON'S NEW TEETH:
China's Future Unmanned Air and Space Forces

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Strategy and Policy Department [Global Advanced Research Project].

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signature: _____

14 June 1996

Paper directed by

Professor Orville E. Hay
Director, Advanced Concepts Department

Prof Arthur N. Waldron Date

Executive Summary of

THE DRAGON'S NEW TEETH: China's Future Unmanned Air and Space Forces

Thesis: Presently the PLAAF is a numerically impressive manned air force, but only a defensive force which is under-equipped and under-trained. What offensive forces exist are found in the strategic, operational, and tactical missiles already possessed by the PLA, PLAN, and PLAAF. In fact, the Chinese view missiles as one of the best ways to improve the operational effectiveness of Chinese Armed Forces in the short term. As opposed to manned air forces, these three levels of missile forces, strategic, operational, and tactical, represent the real offensive power of the Chinese military.

Central Proposition: As the Chinese are not yet an "air-faring people", China will only emulate the Western air forces to a limited degree. Due to historical trends, Chinese air and space power will rely on "politically dependable" missile-forces for its airpower and to generate prestige and hard currency.

Organization: This paper is organized as descriptive narrative of these air and space power missile assets and is divided into three parts. The author first describes the extreme backward nature of the PLAAF. In this first part part the author concludes that "[a]lthough China clearly has the numerical upper hand in terms of force levels and equipment, in the areas of sophisticated, high-performance weaponry and support systems, the PLA[AF] is still lamentably under-equipped." Their aircraft are obsolete, their training insufficient, and their doctrine outdated and only supportive in nature, Chinese manned airpower will be only of limited effectiveness in the near future for

anything but a defensive role. At least in the near term, China must turn to other solutions to solve its air and space power needs.

In the second part, the author describes in turn the unmanned air and space tools that China may use for offensive operations. This part includes sections on Space Force Multipliers, Strategic Nuclear Forces, and Theater and Naval Missile Forces. Altogether China has a robust, and in some regards, threatening space program. Modern launch facilities have been completed and upgraded, reliable launch vehicles are being designed and flown, and a host of satellites demonstrating great capability are being prepared to go into orbit. Unfortunately, many of these capabilities also have military. China appears to have a strategic nuclear weapons program whose capability is only accelerating in nature, including a road mobile ICBM force. Furthermore, China continues to expand its theater ballistic and cruise missiles. These systems, aided by GPS, may represent substitutes for other weapons and platforms used in the West, such as manned aircraft, or they may be something permanent in the Chinese arsenal.

Finally, in the last part the author discusses some trends in the near-term indicators for assessing the future strength of Chinese air and space forces. Chinese purchase of long-range fighter interceptors like the SU-27, acquisition of aerial refueling capability, as well as improvements in space-borne ISR assets, China continues to make strides in its power projection capabilities. More importantly, as China continues to nurture and improve these technologies, they may become even more threatening to its neighbors and Western weapons systems which may encounter them in many parts of the globe due to Chinese arms sales.

Executive Summary

THE TAIWAN INDEPENDENCE MOVEMENT

for the
Institute for National Security Studies

by
Robert L Cummings Jr, Maj (Sel), USAF

This paper examines the Taiwanese Independence Movement from a political, cultural and social perspective. It proposes that Taiwan is already a *de facto* independent state: it has a distinct population, a governing system, clearly defined territory, a highly developed economic system and independent international relations. The argument over the island's status pertains to the question of a *de jure* declaration of independence. If, how, and when this formal declaration will occur, or if, how and when Taiwan will become a part of a Greater China including the mainland is the central issue, and of utmost concern to US policy in the Pacific Region.

One's view of the "Taiwanese Independence Movement" as an organized socio-political activity determines to a great extent one's political alignment in the rapidly changing Taiwanese system. Many of the ruling Kuomintang (KMT) party see the movement as a political ploy by opposition parties (the main one being the Democratic Progressive Party, DPP) meant to promote a subculture of "victims" and stir up emotional resentment against the KMT, thereby increasing the opposition's share of voters. One could also analyze the movement as led by a set of intellectuals redefining and arguing over terms such as "Chinese People" and "Nation," calling on the uneducated masses to wake up to their "Taiwaneseness" and revolt against the current regime's definition of reality. This could be seen as carrying on a Chinese tradition in which an educated elite use the power of language to create and sustain an ideological movement calling the masses to action.

On the other hand, advocates of the independence movement see the movement as a part of the wider trend of democratization, nationalism and a distinct "people" yearning for self-determination. They regard the KMT of the past, and indeed all previous external ruling regimes, as foreign occupiers denying the Taiwanese people their rights to self-government. They can easily point to a repressive KMT regime that tolerated no words or actions suggesting that Taiwan is an independent island with an indigenous culture and people. International events, in which Taiwan's political status as the Republic of China has steadily eroded under great pressure from a steadily strengthening mainland China, combined with internal democratic, social, and economic developments have led many Taiwanese, with or without the help of an educated elite, to a greater consciousness of their status as an independent entity faced with a struggle for political survival. The result evident in surveys is a greater self-identification of the populace as "Taiwanese" versus "Chinese," and open debate about how to best deal with the threat from across the strait. Recent splintering of radical pro-independence advocates away from more moderate opposition party members demonstrates that the debate rages not only between independence and unification advocates, but also between differing pro-independence factions as well.

Both sides of the independence-unification debate present their own unique interpretation of history, of political and cultural terms, and of ethnic identification. In this report, I briefly discuss my method of inquiry into the problem: a combination of attitude survey results (including my own), interviews of political and intellectual elite, and research of secondary sources. I then present Taiwanese history, noting the conflicting views, particularly describing international and internal events since the 1970s affecting the rise of the Independence Movement. The following section introduces a theoretical framework to better understand Taiwanese society, expounding on the concepts of nation, state, political community, political culture, cultural identity and political legitimacy. The fourth section applies that framework using my findings from surveys, secondary literature, and elite interviews. The final section explores the significance of the Independence Movement in relation to the People's Republic of China (PRC) and United States policy in the Pacific region.

After careful investigation into this topic, I conclude that most Taiwanese, perhaps because of cultural background, seem to seek peace, harmony and stability in relationships—the building of a specifically Taiwanese national identity separate from China is largely an ideological concept that is unlikely to be supported by the majority of practical-minded Taiwanese. However, democratization in Taiwan, as well as economic development and the growth of a wealthy middle class, will create increasingly divergent societies across the Straits. The Independence Movement, now mostly represented by the Democratic Progressive Party (DPP) and other splinter groups, has slowly but steadily gained popularity and legitimacy, particularly in the recent rapid democratization in Taiwan. Supporters of formal independence include societal elements not presently politically powerful, such as the lower-income class, an intellectual elite, and opposition politicians seeking to use social discontent to secure votes. Pro-independence citizens are still in the minority, and will likely remain so for some time, especially in the face of military threats from Mainland China. Although the newly wealthy middle class and business interests in Taiwan do not seem to favor independence at this time, preferring stability in all international relationships, neither

will they accept reunification with an oppressive Communist regime. Polls show a steady percentage (about 17%) solidly supporting unification, while the number supporting independence, or willing to consider it, has increased recently. Perhaps what keeps more Taiwanese from supporting the Independence Movement is mostly the threat of invasion from the Mainland and the perception that Taiwan would be ruined either in a takeover or in the resistance attempt. If the perception should change that Taiwan could be militarily strong enough to declare independence (perhaps with the perception that the US would militarily support Taiwan); and if the Mainland continues to be run by authoritarian regimes, perhaps that middle class will support independence.

Nationalism—a fervent, emotional appeal to unite a people through a common language, culture, ethnicity, or through the state creation of other bonds—is becoming increasingly important in the entire region. Nationalism can work either for reunification of Mandarin speaking Chinese seeking a “Greater China,” or for independence of an increasingly divergent political culture on Taiwan. Polls on cultural identity show that most Taiwanese have a strong sense of Chinese identity and hence feel connected to the Mainland; however, identity as Taiwanese has increased recently as well, particularly in reaction to an aggressive PRC policy. The political culture and cultural identity of Taiwanese is presently undergoing rapid transformation, probably linked to both economic and political changes. The leaders on both sides of the Straits may use nationalism to boost their support as they face difficulties at home. Lee Teng-hui must deal with a powerful, vocal opposition, and Jiang Zemin faces difficulty with the military and a power struggle after Deng passes away. They are both likely to use nationalist rhetoric and less likely to compromise on either the position of winning international recognition and prestige for Taiwan (though this is short of independence for now), or maintaining authoritarian political order while developing economically for Mainland China. Particularly in communist China’s case, we may not expect entirely “rational” approaches from an international perspective, if belligerence against Taiwan is seen to bolster Jiang’s image.

The PRC has reacted to the independence movement with increasing nationalist rhetoric. It has not changed its position on Taiwan independence, considering it an internal matter of national sovereignty, and in fact has taken an increasingly tough stance on the matter, perhaps due to increasing influence of the hard-line PLA in PRC domestic politics. The use of military exercises and threats, including the firing of live ammunition in close proximity to the island, constitutes a dangerous heightening of tension. The possibility of shots fired in anger between the two sides increases with each exercise held by the Communists.

The US should be concerned over this situation of heightening tension over Taiwanese independence, yet should support the democratic changes going on in Taiwan. We should maintain our stance of letting the two sides work out the matter among themselves, but we have an overwhelming interest in preventing the outbreak of hostilities, due to key economic ties with Taiwan and the PRC and to the US interest in maintaining regional stability (e.g. the implications for North and South Korea). The most likely outbreak of hostilities involves a Mainland invasion of Taiwan. In order to prevent this from happening, we should support the continuing democratic process and economic growth in Taiwan, without specifically supporting an independence movement. The US should also encourage engagement between the Mainland and Taiwan, through economic and other ties. However, we must make it extremely clear to Mainland China that we will not tolerate an invasion of Taiwan, that we will honor our obligations in the Taiwan Relations Act, and that we will promote our interest in maintaining peace, stability, and democratic governments in the region. A tough stance now lessens the possibility of actually having to use force later, as the assurance of US aid during an invasion of Taiwan should make the potential cost much too high for Communist leaders contemplating an invasion. This requires a delicate balance, however, in which we do not encourage a radical independence movement with promises of military aid that would surely provoke an attack from the Mainland.

Nonetheless, we should recognize the reality of one of the world’s most complex political situations: Taiwan is an independent, sovereign nation with a clearly defined population, territory, political and economic system, and military. At some point in the future, it may reunite with the Mainland to form a Greater China, or it may decide to continue as an independent island nation. The current transformation of the identity of the people on Taiwan makes this future unclear, but the US as a matter of principle and practicality should respect the will of the Taiwanese population and not abandon them to the whims of Beijing. Continued or increased arms sales to Taiwan and support for international recognition will promote US interests in preserving Taiwan as a democratic, capitalist-market ally and model for Chinese economic and political development.

KOREAN UNIFICATION
PROBABLE, BUT UNPREDICTABLE

Research paper for INSS
submitted by Sharon Richardson
October 9, 1996

Abstract

Forty-three years after the armistice ending the Korean conflict, the Korean Peninsula remains divided. While it may seem inevitable that the country will eventually be united, it is difficult to predict either when or how this may be accomplished. To understand attitudes and to anticipate possible scenarios for unification, a study consisting of interviews and literature research was undertaken. The interviews were conducted with politicians, high-level officials of the government of the Republic of Korea, businessmen, academicians, members of research institutes, and U.S. government officials. Diplomats from Russia and the Democratic People's Republic of Korea were also interviewed.

A background on Korea is provided as a narrative, briefly discussing history and the current economic and political situations.

Interviews were conducted in November 1995 and June 1996. A standard set of questions offering three scenarios for unification was used for the interviews. The scenarios offered for comment were: 1) attack by the North on the South followed by the South's victory and political and economic domination by Seoul; 2) a negotiated confederation--one country, two systems; and 3) an economic or political collapse of the North followed by absorption by the South. The option of no unification was also offered.

The survey showed that attack by the North was not ruled out, but the consensus was that this possibility was improbable. A negotiated unification resulting in a confederation of one country, two separate systems was also considered unlikely. The scenario which many respondents found most reasonable was the collapse of the North

followed by absorption by the South. No one interviewed thought the countries would remain separated. A fourth scenario--a process--emerged in the later interviews. A number of South Koreans thought this a feasible manner to achieve unification. Both sides assert they want unification as soon as possible, but some opinions indicate the South is concerned about the costs of unification and is willing to postpone unification to save themselves a great financial burden. The premise is that the North will have time to improve its economy.

Another approach to the project was to determine Korean perceptions of how the four regional, influential powers of China, Japan, Russia and the United States might view a united Korea. The opinions suggest that all the powers preferred the status quo. In this manner, they could play the North against the South. A divided nation is also less of a threat militarily, and not an economic competitor. Several respondents felt that Russia was indifferent to unification, but the Russian diplomats indicated that is not the case. Several South Koreans expressed suspicion regarding U.S. statements favoring unification.

In summary, South Koreans are ambivalent about unification. The emotional desire is strong, but the fear of an anticipated enormous expense tempers this desire. The U.S. objectives are to maintain peace and stability in the area in order to foster a peaceful unification of the Peninsula. In order to reach this goal, the two Koreas must begin with a dialog to discuss and resolve their differences. The U.S. and China may act as brokers in this process if the proposal for the 4-party talks is accepted and implemented. The U.S. should also continue a policy of engagement of the North and may do so through food

assistance and the opening of Liaison Offices--a step toward normalization of diplomatic relations. Other opportunities for specific U.S. involvement are through the consortium providing light water reactors (under the Geneva Accords of 1994) and the ongoing search for MIAs. The U.S. must assume a positive leadership role and encourage the South to be generous in its dealings with the North and to end the rhetoric so that a process of reconciliation may begin.

Panel 8: REGIONAL SECURITY (Middle East)

Capt John Capello, USAFA Department of Political Science
--The United States, Iran, and the Persian Gulf

Lt Col Terry Jones, 652 Combat Logistics Support Squadron, McClellan AFB
--Defense Cooperation in the Persian Gulf

Capt Tony Del Genis, USAFA Department of Political Science
--The Feasibility of US Joint Service Ballistic Missile Defense and an Examination of
US-Israeli Ballistic Missile Defense Initiatives

The United States, Iran, and the Persian Gulf

**A research report for
The United States Air Force Academy Institute of National Security Studies**

by

**Captain Donald G. Rose, USAF
&
Captain John T. Cappello, USAF**

1 October 1996

EXECUTIVE SUMMARY

The purpose of this research project was to examine the threat Iranian ambitions and intentions pose to American interests in the Persian Gulf and determine how United States security policy might best address that threat. The key problem in this effort was determining what Iranian ambitions and intentions are. Given the lack of reliable information from inside Iran, we concentrated on presenting the differing interpretations of Iranian statements, actions, and activities. These, in turn, lead to an examination of the current U.S. security policy towards Iran--Dual Containment.

A consideration of Iran's ambitions and intentions in the Gulf must begin with a view of the region from Tehran's perspective--the perspective that frames the decisions of the Islamic Republic's leadership. The Iranian perspective on the surrounding area is informed largely by a view that Iran is the most important state in the region. Iranians accept many statistical indications of their country's importance as confirmation of what history tells them about themselves: they are destined to dominate the region. This sense of superiority and natural leadership in the region is augmented by a feeling of singularity: Iranians are different from--as well as better than--their neighbors. A combination of size, history, cultural prestige, and singularity drives a feeling of self-importance and a conception of Iran as the rightful regional leader. But this idea of distinctiveness also lends the Iranian mindset a sense of separation from their neighbors, a sense that Iran is surrounded by unfriendly powers. This has been compounded historically by foreign conquests, and in the modern era by a series of colonial or semi-colonial experiences.

Iran's view of itself and the region, then, involves both a claim to leadership and a fear of external domination. When the Iranian leadership looks at Iran's borders and the surrounding region, it can take the view that the region either harbors instability and threats to the new republic or is ripe for a new Islamic-Iranian empire. Undergirding an "arc of crisis" to Iran's north is the Persian Gulf, dominated militarily by the United States and its allies and geographically by Iran. Given Iran's traditional attitude regarding the Gulf, and its hopes for leadership there, the current situation gives rise to some Iranian concern. If the arc of crisis is one of instability, the concern in the Gulf is one of vulnerability. Iran's concerns are driven by the economic reality that Gulf oil and gas will remain Iran's premier (nearly sole) foreign exchange earner for the foreseeable future. "These exports account for more than 95 percent of its foreign exchange revenues. Freedom of navigation is a survival issue for Iran.

The lack of informed knowledge about the Iranian governments true intentions in the Persian Gulf allows personal views of Iran to influence opinions. Government and academic circles within the U.S. are divided into two general camps that take starkly opposing positions on Iran. The negative view sees Iran as a threat to U.S interests and allies, while the positive view sees the U.S.-Iranian relationship as the

unfortunate result of misperceptions, but one that needs to be improved before a violent conflict results from misunderstandings.

One of the easiest cases to make in foreign policy circles is that against Iran. So much of Iran's behavior in the Gulf is seen as countering U.S. interests. Iran's buildup of its conventional military forces, support for terrorism, pursuit of weapons of mass destruction, opposition of the Middle East peace process, and aspirations for regional hegemony all threaten U.S. interests in the region and cause concern among policy makers. The main conventional threat Iran poses to the United States and its allies in the Gulf, is in the naval arena. But there are two areas of greater concern for U.S. policymakers: Weapons of mass destruction (WMD) and terrorism. If the threat of Iranian hegemony through conventional weaponry is somewhat dubious, there is room to consider whether Iran is pursuing high-end (WMD) and low-end (terrorism) capabilities in order to counter what is an insurmountable gap between itself and its potential adversaries in conventional capabilities.

The more positive views of Iran's intentions and ambitions in the Gulf tend to stem from a world view in which Iran is a key regional actor; an actor the U.S. needs to deal with because of its geopolitical importance. Those who share a positive view of Iran's intentions in the Gulf often find themselves in a defensive posture, denying accusations of the Islamic Republic's aggressive ambitions. When they state their view of what Iran's policy actually is, they usually focus on Iran's interest in regional stability. They look with sympathy at Iran's geostrategic situation and argue that a state surrounded by such instability would focus on attempting to bring order to the regional system. This positive view of Iran's Gulf policy attempts to make the case that Iran's policy elsewhere is rational and therefore it is, or with encouragement can be, rational in the Gulf as well.

The current U.S. policy toward Iran is expressed in the overall policy towards both Iran and Iraq: Dual Containment. The policy of Dual Containment seeks to contain the influence of these states. In the Persian Gulf specifically, the administration wanted to replace the old idea of balancing Iran against Iraq, and still maintain a favorable balance in the region--favorable to U.S. interests. The argument of the Clinton administration was that a new strategic situation in the Gulf presented an opportunity in which the U.S. would have to depend on either Iran or Iraq, and would be able to balance both of them itself--with the help of regional allies. When the policy of Dual Containment was announced, Clinton administration spokesmen were careful to point out that the thrust of the policy toward Iran was to discourage Iran's support for terrorism and pursuit of nuclear weapons capability. During 1994 there was no criticism of trade with Iran, no criticism of dialogue with Iran, and no discussion of changing the regime in Iran--only modifying its behavior. In the intervening two years, this has changed drastically. A full embargo on trade

between the US and Iran was imposed by executive order; the CIA has been empowered to mount a \$18 million campaign to change the policies of the Iranian government; the "D'Amato Bill" was passed, imposing sanctions on any person, company, or state that makes new investments in Iran or Libya worth more than \$40 million.

US-Iran relations are currently at a low point. The question among many is whether these deteriorating relations are helping or harming U.S. security interests in the region. There is a concern that U.S.-Iran relations have entered a spiral conflict in which each side, defensively motivated, perceives the other side as the aggressor. Each side then takes measures to deal with the perceived threat. Each side sees the others defensive acts as proof of their aggressiveness. This leads to a spiral process where each side views the other in simplistic, often stereotypical terms. The question then is whether U.S. policy towards Iran is strategically appropriate. Is Dual Containment causing more problems than it is solving? The conclusion of the authors is that because Dual Containment was executed in a flawed fashion, straying from its original goal of changing the behavior of the Islamic Republic, it has furthered a spiral of conflict which now threatens to leave both sides unable to break free of dangerous perceptions and images. The danger is that neither side can summon the imagination and creativity needed to extract each other from the current acrimonious relationship. If this situation is unchanged, if the rhetoric and actions continue to escalate, the U.S. will need to prepare for the worst. To avoid this, Dual Containment must return to its first principles. The only hope is to encourage an evolution of the regime in Tehran, and the current policy is not doing that; indeed, it is probably encouraging radical factions who are convinced that Iran cannot and should not deal with the U.S. Keeping in mind that engagement does not equal appeasement, the administration should cool down and back off the inflammatory rhetoric. After a period of ignoring Iran, an attempt should be made to start a dialogue on common security interests in the Gulf. Rather than weakening America's position this approach will serve to strengthen its hand, not only with Iran, but with U.S. allies as well. Bringing Iran back into the fold puts pressure on Iran to meet expectations and will place the allies on the spot as well. If engagement fails they would be obliged to join the tougher sanctions, which would make them even more effective.

DEFENSE COOPERATION IN THE PERSIAN GULF

by

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July 15, 1996

The views expressed in this paper are the author's and do not reflect the official policy or position of the U.S. Air Force, the Department of Defense, or the U.S. Government. Research for this paper has been funded, in part, through the Institute for National Security Studies.

EXECUTIVE SUMMARY

Since the end of the Gulf War the United States has maintained a significant level of military power in the Persian Gulf region. Iraq remains a substantial threat to its neighbors, while Iran continues as an immediate political threat and a looming military threat to the region. As a result the United States continues to engage in a dual containment strategy to ensure both Iraq and Iran will not threaten U.S. vital interests or allies in the region.

The key to the U.S. strategy is defense cooperation between the United States and Arab allies as well as between the Arab allies. However the Arab-gulf states hold widely diverse threat perceptions. The northern Gulf states generally view Iraq as the primary threat while the southern Gulf states view Iran as the predominate threat. In addition to the divergent threat perceptions, several other factors are also hampering both areas of cooperation.

Between the Arab allies of the Gulf Cooperation Council (GCC) the following factors significantly hamper defense cooperation:

- Political Rivalries within the GCC
- Unsettled Border Disputes
- Economic Constraints
- Demographics
- Equipment and Doctrinal Interoperability

U.S.-Arab defense cooperation is further hindered by the following factors:

- Internal Arab Political Stability
- Islamic Religious Concerns of Western Influences
- Arab Social Discontent
- Economics
- Perceptions of U.S. Staying Power

To overcome these challenges the United States should embark on a U.S.-GCC integrating strategy that would require a multilateral approach to defense cooperation in addition to the successful bi-lateral

strategy. Moreover the United States could encourage a continuation of political reforms to reduce the threat of political and civil unrest in the region. The United States will continually need to diversify its presence in the region to include an increased reliance on the Airpower Expeditionary Force deployments. Finally, the United States will need to plan for a strategy beyond dual containment in anticipation of changes in the Arab-allies threat perceptions as well as eventual and unpredictable changes in the leadership both in Iraq and Iran.

*The Feasibility of US Joint Service Ballistic Missile
Defense and an Examination of US-Israeli Ballistic
Missile Defense Initiatives*

By

Tony DelGenis, Capt, USAF

Instructor, Department of Political Science, USAF Academy

1 October 1996

*Prepared on behalf of the Institute for National Security Studies,
United States Air Force Academy*

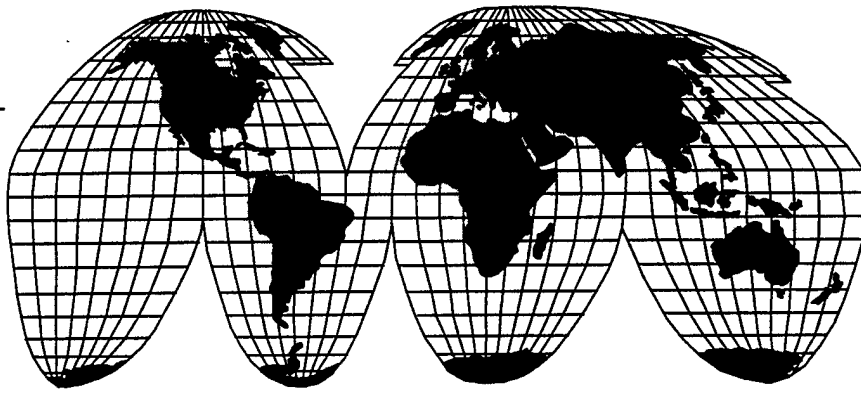
Executive Summary:

The proliferation of ballistic missiles in the wake of the Cold War has led to a spate of military and scholarly analysis as to how the US can best address this emerging and growing threat. One of the possibilities involves the development of a joint service ballistic missile defense (BMD). In this first part of this paper, the services' major ballistic missile defense programs are addressed; including the Patriot Advanced Capability-3, the Theater High Altitude Area Defense, the Medium Extended Air Defense System, the Navy Area Defense Ballistic Missile Defense System, and the Navy Theater Wide Ballistic Missile Defense System. Besides a system description, the latest planned deployment date is given, along with the 1997 Defense Authorization Bill--signed by President Clinton on 23 September--allocation for each system. Based on this information and the progress made in most of these systems, a joint service ballistic missile defense appears technologically possible at some point in the near future. However, impediments include the role of the Congress and interservice rivalry.

The current Republican-controlled Congress has chosen to make missile defense, especially National Missile Defense, a priority; however, missile defense has clearly failed to catch on as a presidential campaign "hot button" issue. Congress seems to have fallen into a self-imposed "do something" trap, whereby some members think that US forces will be protected by a leakproof ballistic missile defense merely by increasing authorizations and appropriations. This will not work. Congress could facilitate the development of a joint service ballistic missile defense system by ceasing in its technologically unreasonable calls for premature BMD system deployment. Interservice rivalry will continue for the foreseeable future, given the services' push to increase roles and missions. Both the Army and Navy have compelling reasons as to why their separate BMD programs are critical. Formation of a joint service BMD will demand strong CJCS leadership with the clear backing of the JCS. In the absence of a galvanizing ballistic missile threat however, joint service BMD is not imminent.

The second part of this paper addresses Israeli ballistic missile defense efforts five years after the Gulf War. Since the 1973 Yom Kippur War, the security of Israel has been a critical interest of Washington. In contrast to the US, Saddam Hussein's SCUD bombardment demonstrated that Israel does

face a galvanizing ballistic missile threat. Washington is helping Tel Aviv to address this threat by providing financial and technological support to Israeli BMD efforts. This paper examines the specifics of US assistance to Israel in the BMD arena, and the potential for an eventual American backlash against the amount of resources being provided to Tel Aviv.



Appendix B

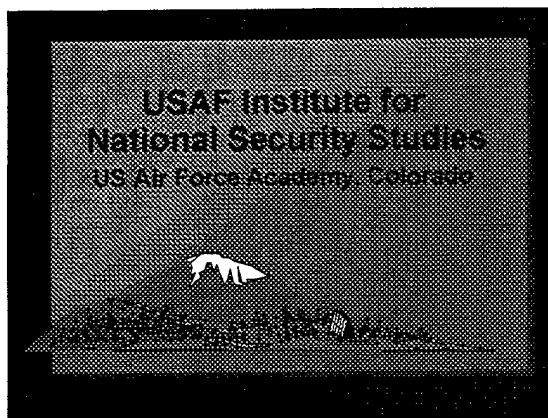
Briefings

1996 Research Conference

Briefing
USAF Institute for National Security Studies

Lt Col Pete Hays

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Mission of the Institute

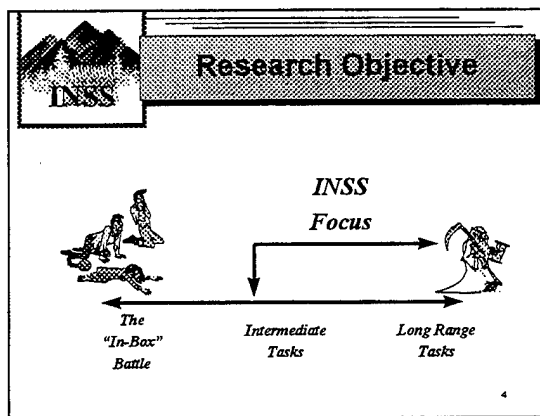
To promote national security research for the Department of Defense within the military academic community, and to support the Air Force national security education program.

2

Background

- ♦ Started in 1992
- ♦ Initially a research arm for XOXI
- ♦ 1st 3 yrs: 135 projects, 203 researchers, \$555k
- ♦ FY96: 82 projects, 150 researchers, \$250k
- ♦ 21 schools:
 - USAFA, USNA, USMA
 - National, Air, Army, and Navy War Colleges
 - NPS, Army Cmd & Staff, ACSC, AFIT
 - 10 civilian universities

3



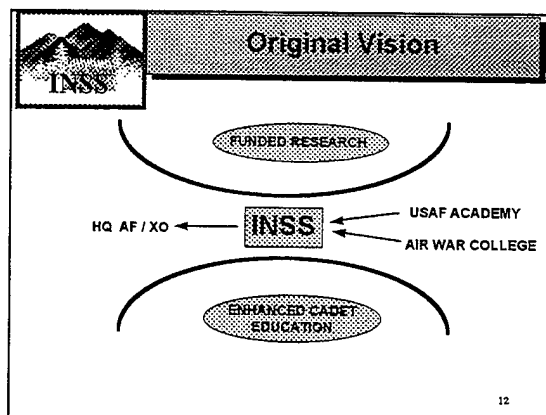
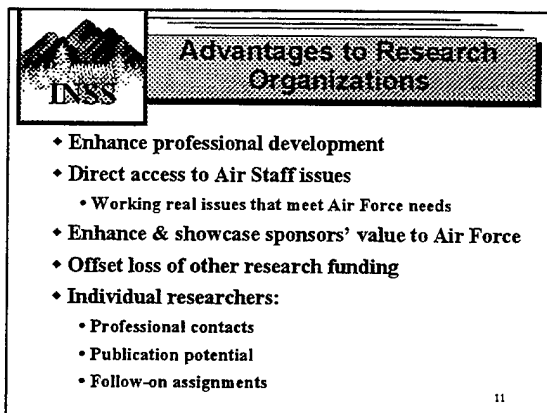
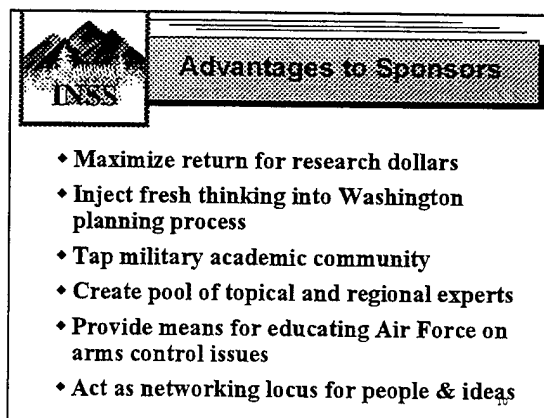
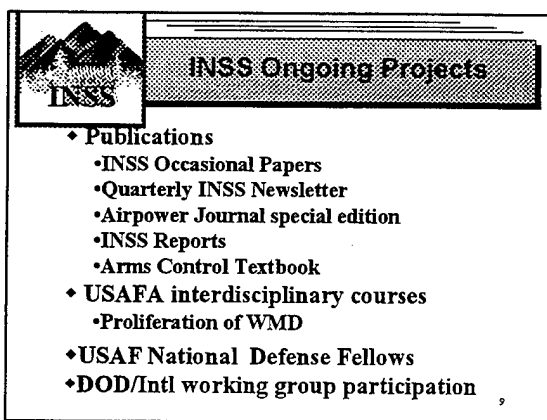
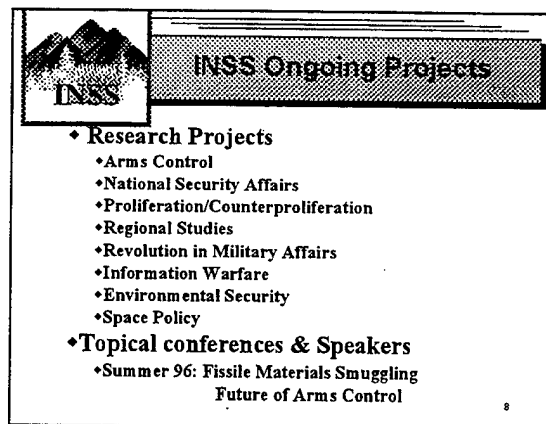
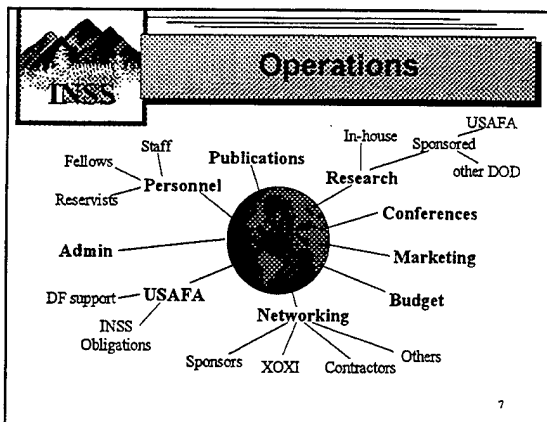
Sponsoring Agencies

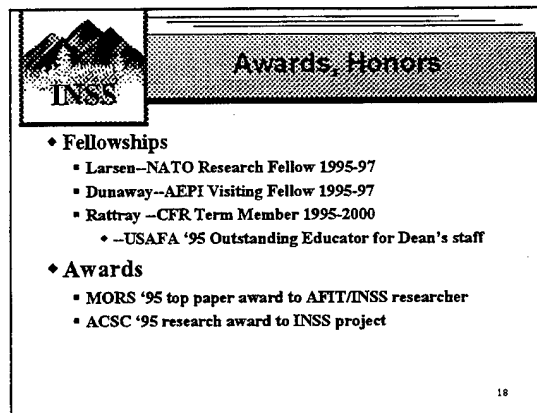
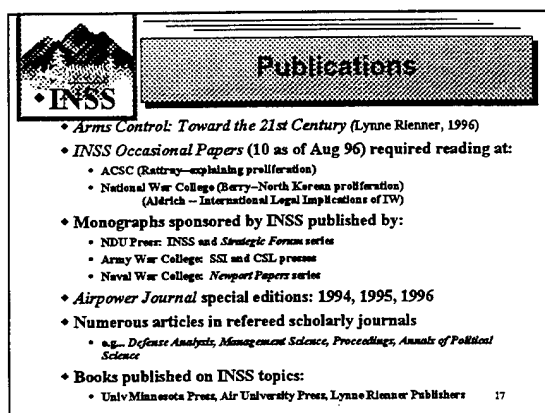
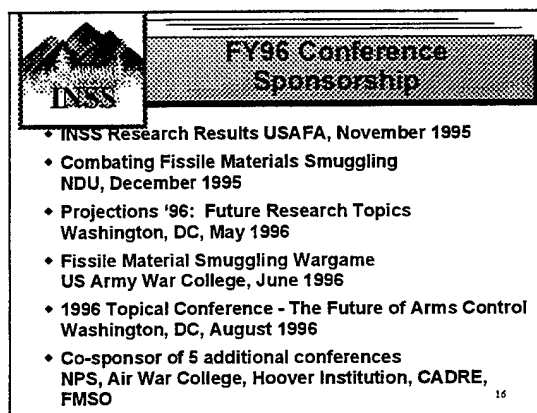
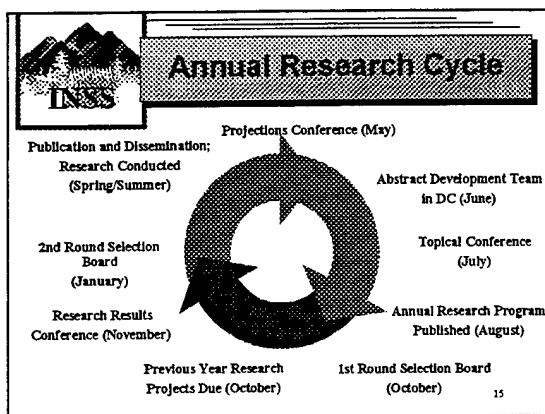
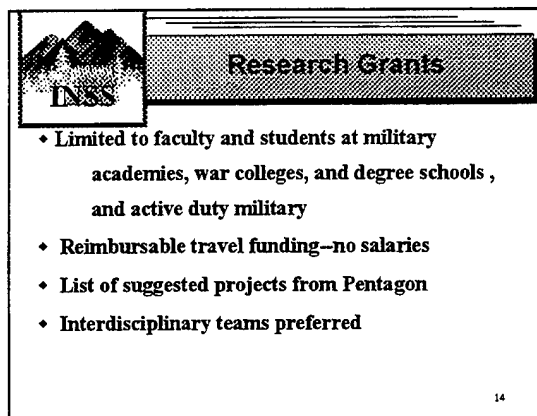
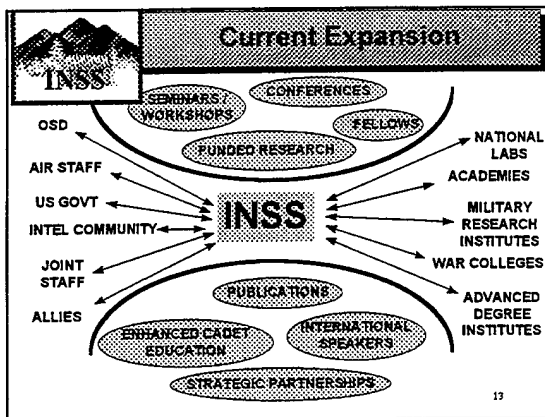
- ♦ HQ USAF/XOXI
 - National Security Negotiations Division
- ♦ Air Force Intelligence
- ♦ Defense Special Weapons Agency
- ♦ Army Environmental Policy Institute
- ♦ OSD Net Assessment
- ♦ US Army Space Command
- ♦ On Site Inspection Agency
- ♦ Interest expressed by: other XOX offices, DOE, DIA
- ♦ Host: USAFA Dean of the Faculty (DFE)

5

INSS Responsibilities

- ♦ **Primary Purpose: Research Management**
 - Funnel between Air Staff and researchers
 - Bring together ideas, money, and people
 - Focus outside thinking in various disciplines
 - Coordinate and manage funded research
- ♦ **Second Purpose: Networking**
 - Develop strategic partnerships with other national security organizations
 - Act as a clearinghouse of information to serve a broad community
- ♦ **Third Purpose: INSS Staff Research & Education**







Vision

*Be the Air Force institute of
choice for promoting,
coordinating, and disseminating
vital national security research
that influences DOD policy
development*

Briefing
***The Development of an Agreed NATO Policy on
Nonproliferation***

Lt Col Jeffrey Larsen

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THE DEVELOPMENT OF AN AGREED NATO POLICY ON NONPROLIFERATION

Lt Colonel Jeffrey Larsen, PhD
INSS Senior Research Fellow

1

"We attach the utmost importance to preventing the proliferation of WMD, and, where this has occurred, to reversing it through diplomatic means...[Yet] as a defensive alliance, NATO must be prepared...to counter this risk and thereby protect NATO's populations, territory, and forces."

—DPC/NPG Communiqué, June 1995

2



Post-Cold War Threats

- More diffuse than Cold War, but still a dangerous world
- Rogue states, non-state actors, terrorist groups armed with WMD
- Fissile material/weapons from FSU
- Spread of ballistic missiles, other delivery means
- Growing realization that traditional nonproliferation methods have failed to prevent WMD spread

3

Proliferation Importance to NATO

- Concerns: threats against population, territory, deployed forces, freedom of action in out-of-area operations
- Reasons proliferation became NATO issue:
 - 1991 Gulf War, coalition unready for NBC
 - 1991 Post-war IAEA inspections in Iraq
 - 1992-94 North Korean nuclear crisis
 - 1994 Fissile materials smuggling in Germany
 - Growing concerns by Southern Flank states about rogue nations in Mideast & North Africa

4

Proliferation Importance to NATO

- Specific concerns:
 - Revanchist Russia
 - Middle Eastern states
 - North African states
 - Facing adversary armed with WMD
 - Regional conflict involving WMD
 - Deployed troops performing MOOTW or in regional conflict under threat of WMD
- Prolif of WMD undermines development of a stable security system in Europe

5

Possible NATO Nonproliferation Roles

- Defusing proliferation incentives
 - Traditional nonproliferation efforts, plus political measures, including NACC, PfP
- Enforcing international sanctions against proliferators
 - UN, OSCE operations, especially within Europe
- Offensive military action against proliferators
 - Preemptive defense, out-of-area
- Developing ballistic missile defenses

6

Background

- Nov 1991: Rome Summit, new Strategic Concept
 - Efforts in traditional nonprolif realm: export controls, passive defense, air defense
- Jan 1992: UN Security Council Resolution on prolif.
- Oct 1993: Aspin raises CP idea at NATO Ministerial
- Jan 1994: NATO Summit, Brussels, calls for study of proliferation threat
- Jun 1994: Istanbul Ministerial announces new policy framework for studying proliferation

7

NATO Nonproliferation Committees

- Created 1994 with 2-year charter
 - Extended indefinitely at June 1996 NAC
- Joint Committee on Proliferation
 - Chair: NATO Deputy Secretary General
- Senior Political-Military Group on Proliferation (SGP)
 - Political discussions, assessments, studies
 - Traditional nonproliferation efforts in a new forum
 - Discussions with NACC, PfP, 16+1
 - For Min/State members
 - Chair: NATO Asst. Secy for Political Affairs

8

Nonproliferation Committees (cont'd.)

- Senior Defense Group on Proliferation (DGP)
 - Co-Chairs: US Asst SECDEF for ISP, European equivalent (rotating: France, UK, Italy)
 - Military dimension; MOD/DOD members
- 3 phases of study:
 1. Threats & risks to Alliance
 2. Implications for defense posture
 3. Current capabilities/Shortfalls/Remedies

9

DGP Phase Studies

- Phase I: Threats & risks to Alliance
 - May 1995
 - Focus on key states; difficult to achieve consensus
 - 1st such risk assessment ever conducted by NATO
- Phase II: Implications for defense posture
 - Nov 1995, 2 parts:
 - implications for NATO defense: most likely scenario is threat vs. deployed troops, in ports, to degrade conventional superiority and attack public resolve
 - needed CP force capabilities: active and passive defenses, intel, counterforce capabs., battle mngmt.

10

DGP Phase II Core Capabilities

- Emphasize NATO's 3-tiered "core capabilities" and incorporate in force planning and training
- Tier I, needed ("core") capabilities
 - strategic and operational intelligence
 - automated, deployable C³
 - wide area ground surveillance
 - biological & chemical agent detection, identification, and warning
 - extended air defenses, including TBM for deployed forces
 - individual NBC protective equipment for deployed forces

11

DGP Phase Studies (cont'd.)

- Phase III: Existing capabilities, shortfalls, and suggested remedies
 - June 1996, 39 recommendations (Action Plans)
 - Develop base of capabilities for multiple taskings, expand as necessary in future
 - Call for enhanced multinational training & exercises
 - Accelerated force planning process to address capability shortfalls
 - 1st time ever done; also 1st time included France
- "Phase IV": Implementation
 - Difficult to achieve; no consensus on threat or need
 - No additional funding

12

US Defense Counterproliferation Initiative

- Established 1993
- Key emphasis areas:
 - nonproliferation
 - offensive counter measures (counterforce)
 - active defense
 - passive defense
- Following list from CPRC/JWCA prioritization, pursuing best return for short term investment

13

US Counterproliferation Shortfall Priorities

- Detect, ID, characterize biological & chemical agents
- Cruise missile defense
- Theater ballistic missile defense
- Detect, characterize, defeat underground WMD facilities
- Collect, analyze, disseminate actionable intelligence
- Robust passive defense to enable contd. opns in NBC
- BW vaccine R&D, testing, evaluation and production
- Planning and targeting for above ground infrastructure

14

Counterproliferation Shortfalls (cont'd.)

- Biological/chemical agent defeat
- Detect and track WMD and WMD-related shipments
- Prompt mobile target detection and defeat
- Support for special operations forces
- Defend against paramilitary, covert delivery, terrorist WMD threats
- Support export control activities of the US govt.
- Support inspection and monitoring of verifiable arms control agreements and regimes

15

Comparing NATO and US Counterproliferation Efforts

- Both have 2 elements: prevention and protection
- Intelligence sharing
- US funding & efforts will be used by NATO
- Both stress TMD
- Very similar lists of shortfalls, priorities, remedies
- Key difference: US counterforce not same as NATO response capabilities
 - NATO simply polling nations as to existing capabilities, not pursuing new ones

16

United States: *Leader in Policy Development and Procurement*



- US has several programs already underway in each of the items on shortfall list
- CPI effort alive and well
- As in past Alliance programs, the US could go it alone, and would, given its global interests, but prefers team effort (and financial help) with NATO

17

France: *Pushing for CP Studies, Renewed NATO Ties*



- Led Alliance efforts and studies
 - 1st co-chair of DGP
- Global reach, global interests
- Potential threats from North African states
- Involvement a test case for decision to renew full military relations with NATO
- Hopes for industrial benefits
- DGP effort was in keeping with long-standing desire for European defense pillar
 - But recognizes need for NATO in new world
- Pleased with results

18

Germany: *Still Leery of Military Options*

- Germany perceives no threat (to FRG)
 - WMD prolif. a peripheral issue of no great interest
 - Don't want to make it a public issue
- Will participate as necessary to retain "good partner" status
 - More involved in out-of-area operations recently
 - But fiscal pressures of reunification mean no funds for new projects
 - Self perceived role: ground troops to deter Russia; other allies can handle out-of-area stuff

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Germany (cont'd.)

- Leader in passive defense capabilities
- Oppose any Alliance offensive operations, even for counterproliferation purposes
 - Moral and legal questions over legitimacy of force, especially if involves WMD use by our side
- If Germany does participate in more aggressive nonproliferation efforts, it will focus on homeland defense, not out-of-area operations

20

Great Britain: *Staunch Partner at Reduced Force Levels*

- Supported SGP/DGP effort
- Interests beyond NATO area
 - Recognizes new threats in new world
 - Views in line with France, US
- Minimal deterrence capabilities
 - Potentially negative implications from BMD efforts
- Preferred to see future efforts subsumed by existing NATO bodies, rather than keeping DGP

21

Future Questions for NATO

- Funding issues—how to pay for this?
- Long-range planning cycles—include nonproliferation considerations in Force Goals and new systems acquisition
- Which NATO organizations should oversee implementation?
- Intelligence sharing a must
- Political will a must, but difficult to achieve and keep in operation involving WMD

22

Conclusion

- June 96 NAC Ministerial conclusion:

"Despite earlier political pronouncements... it is unrealistic to expect that sufficient resources exist to defend and protect NATO populations or territory from WMD attack."

— Guy Roberts
- Therefore, NATO's focus will be on:
 - deterrence
 - passive defensive measures for deployed forces when deterrence fails

23

Conclusion

"NATO is seen as the only international body with the competence to counter the consequences of proliferation... the political mileage for NATO will come from its defense-related contribution in a situation where traditional nonproliferation mechanisms have failed."

—Michael Ruehle

24

Briefing
***NATO's Response to Weapons of Mass Destruction: The
Emerging Reality of NATO's Ambitious Program***

Col Guy B. Roberts

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***NATO'S RESPONSE TO WEAPONS OF
MASS DESTRUCTION:***

***THE EMERGING REALITY OF NATO'S
AMBITIOUS PROGRAM***

***By
COLONEL GUY B. ROBERTS USMC***

1

**PROBLEMS ENCOUNTERED AND
THINGS I WON'T TALK ABOUT!**

- Using the word "Counterproliferation"
- U.S. Counterproliferation Initiative (Well, maybe a little bit!)
- Future of NATO
- Enlargement - NATO "Lite"
- Understanding the Complexities of NATO Bureaucracy
- Why I can't pronounce LTC Alex Ivanchishin's name (or spell it!)

2

ASSUMPTIONS

- Nonproliferation efforts will ultimately fail
- WMD pose a threat to the U.S. and its Allies
- The U.S. will most likely fight in a coalition with allies/friends
- Defense capabilities and enhancements will be affected by the "R" word:
 - Reductions in size of military forces
 - Reductions in size/output of defense industry
 - Reductions in defense budgets

3

***NATO FRAMEWORK FOR
PROLIFERATION RESPONSE***

- 1991 NATO Strategic Concept
- 1993 SecDef Proposes NATO CPI
- 1994 NAC directs work on "overall policy framework"
 - No real consensus on urgency and nature of threat
 - France and UK recognized need; others less sure
- 1994 Two Expert Groups Established

4

***EVOLUTION OF NATO'S
RESPONSE TO PROLIFERATION***

- Senior Political-Military Group on Proliferation (SGP)
 - Developed policy framework
 - Workplan endorsed to address military capabilities needed to deter threat or use of WMD
 - Review how best to complement ongoing prevention efforts
 - 1996 Mandate to continue oversight; includes disposition of WMD in Russia and consultation with PFP countries on proliferation issues

5

***EVOLUTION OF NATO'S
RESPONSE CONTINUED***

- Senior Defense Group on Proliferation (DGP)
 - Conduct assessment
 - Identify capabilities needed
 - Assess Alliance capabilities
 - Recommend specific measures to meet existing deficiencies
- Three Reports
 - Assessment of risks completed in Dec 1994
 - Requirements and needed capabilities completed in November 1995

6

EVOLUTION OF NATO'S RESPONSE CONTINUED AGAIN

- Third Report completed and endorsed by NAC in June 1996
 - Identified and prioritized capability shortfalls
 - Tier 1 - "Core, integrative capabilities"
 - Tier 2 - Significant contribution to current threat response
 - Tier 3 - Not essential for near term
 - Prioritized defense systems requirements
 - Recommended NATO assessment process be integrated in future defense planning

7

OBSTACLES TO ACHIEVING DGP WORKPLAN

- Prioritization of Interests
 - *Where does counterproliferation fit within other pressing issues for NATO?*
- The Budgetary Dilemma
 - "Vision without resources is an hallucination!"
 - *NATO Europe defense expenditures shrunk from 3.6% to 2.3% of GNP*
 - *"There is no nation-wide interest in spending more on defending against proliferation risks. It is just the opposite."*

8

FORCE PLANNING PROCESS

- Force Goals updated every two years
- DGP results in new force proposal initiatives - "Catch-up" force proposals
 - Review and comment by Sept/Oct
 - Defense Planning Committee Review/approval
 - Military Committee Review in November
 - Defense Review Committee approves final product
 - Out-of-cycle force goals presented for approval to Defense Ministers in December
- **Consensus:** Support for full funding of DGP action plans unlikely!

9

RECOMMENDATIONS FOR A MORE REALISTIC, ACHIEVABLE, AND EFFECT COUNTERPROLIFERATION PROGRAM

- Create a NATO Proliferation Risk Intelligence and Analysis Center
- Support Common Funding and Burden Sharing. Commit to Cooperative Research and Development and Procurement Programs
- Re-Orient Doctrine and Embark on Realistic Training for Use of Selective Forces to operate in out-of-area WMD environments

10

FOCUS ON INTELLIGENCE NATO PROLIFERATION RISK INTELLIGENCE AND ANALYSIS CENTER

- *NATO needs a centrally located, commonly funded and politically supported intelligence and analysis center*
- *Goal would be to provide intelligence center to support efforts to prevent acquisition of WMD by "rogues" and terrorist or criminal groups; assist in adaptation of NATO military forces to respond to threat*

11

ADVANTAGES & DISADVANTAGES

- Disadvantages and Obstacles
 - US will have to provide information and sources not otherwise provided
 - Risk that assessments clash with national views
 - Initial start-up costs uncertain
- ADVANTAGES
 - All-source center for information collection
 - Could be used by other national agencies
 - Alliance-wide credibility
 - Relieve pressure to fund other collection programs; common funding lowers costs for all

DEVELOP COOPERATIVE R&D AND PROCUREMENT PROGRAMS

"Effective multilateral approaches are in the American national interest. By sharing burdens with other countries... we can save both lives and money..."

- President Bill Clinton

Bottom Line: Cooperative and Collaborative ventures are inevitable and necessary.

Proposal: Create oversight body to direct collaborative efforts in the full range of counterproliferation technology applications.

13

RECOMMENDED ALTERNATIVES

- Revitalized CNAD
- Use The Technology Cooperation Program Model - SGP likely candidate
- Funding should be "common funding"
 - Common ownership most attractive politically and economically
 - Strengthens commitment, lowers cost, accelerates standardization and interoperability

14

REVAMP TRAINING AND DOCTRINE

- Review doctrine publications and revise to include material about warfare in WMD environments
- US takes lead in initiating combined WMD proliferation exercises
- Designate forces for out-of-area missions
- US should be prepared to fund training and equipment for designated forces to fight in out-of-area WMD environments

15

CONCLUSIONS

- While late in the game, DGP/SGP process has had positive results—new awareness of threat and identified shortfalls
- Budgetary constraints will limit ability to meet ambitious program and extend timelines for correcting deficiencies
- Given intelligence requirements, low cost alternative is to create NATO proliferation threat and analysis center
- Given constrained fiscal resources, truly cooperative programs that focus on common funding are critical
- Training, equipping, providing identified, rapidly deployable Allied forces for out-of-area operations in WMD environment necessary with US taking the lead!

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Briefing
Sustaining Alliance Air Operations in an NBC Environment

Lt Col Kurt Klingenberger

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SUSTAINING ALLIANCE AIR OPERATIONS IN AN NBC ENVIRONMENT

LT COL KURT KLINGENBERGER

7 NOVEMBER 1996

1

HIGH LEVEL NATO CONCERN ABOUT NBC

- ENUNCIATED IN, AS EXAMPLES:
 - NATO STRATEGIC CONCEPT - 1991
 - DEFENSE CP INITIATIVE - 1993
 - NATO BRUSSELS SUMMIT - 1994
 - GERMAN WHITE PAPER - 1994
 - FRENCH WHITE PAPER - 1994
 - U.S. NATIONAL STRATEGY - 1996
 - NATO BERLIN MINISTERIAL - 1996

2

QUESTION PURSUED:

DOES THE DIRECTION OF
NATO'S NBC DEFENSE
PREPAREDNESS MATCH
THE ESCALATING
RHETORIC REGARDING
PROLIFERATION?

3

THE THREAT TO NATO

- CURRENT DELIVERY CONCERNS
 - BALLISTIC MISSILES ALREADY WITHIN
RANGE OF SOUTHERN ALLIES
 - OTHER DELIVERY MEANS
- FUTURE DELIVERY CONCERNS
 - LONGER RANGE MISSILES
 - CRUISE MISSILES AND UNPILOTED
AIRBORNE VEHICLES
 - INCREASED ACCURACY
 - MORE COUNTRIES WITH SUCH MEANS

4

THE THREAT TO NATO

- THE AGENTS
 - NUCLEAR
 - NUCLEAR WEAPONS PROLIFERATION
 - NUCLEAR WASTE AS A WEAPON
 - BIOLOGICAL
 - STILL THE MOST MYSTERIOUS
 - CHEMICAL
 - PROBABLY WHAT MOST PEOPLE MEAN
WHEN THINKING "NBC"

5

QUESTION NOT PURSUED:

HOW REAL AND/OR HOW
SEVERE IS THE NBC
THREAT TO THE ALLIANCE?

(THIS WAS NOT A "THREAT
VALIDATION" EXERCISE)

6

WHAT IS THE PROBLEM?

- PROLONGED OPERATIONS IN AN NBC ENVIRONMENT ARE DIFFICULT
 - LOGISTICS
 - COMMUNICATING/CONTROLLING
 - PSYCHOLOGICAL
 - PHYSIOLOGICAL
 - NORMAL HUMAN FUNCTIONS
 - HEAT STRESS/DEGRADED PERFORMANCE
- AIR BASES CANNOT MOVE EASILY

7

QUESTION NOT PURSUED:

WHAT IS THE EXPECTED
AIRCRAFT SORTIE RATE
DEGRADATION IF AN
AIRBASE GETS "SPLUGED"
OR "SLIMED"?

8

SPECTRUM OF NON- AND COUNTERPROLIFERATION EFFORTS

- DIPLOMACY/COLLECTIVE SECURITY
- ARMS CONTROL/EXPORT CONTROL
- DETERRENCE*
- PREEMPTION (NOT NATO POLICY!)
- ACTIVE DEFENSE
- COUNTERFORCE
- PASSIVE DEFENSE/ATSO

9

WHAT (YOU ARE THINKING) IS ATSO?

- "ABILITY TO SURVIVE TO OPERATE"
- MORE THAN JUST PASSIVE DEFENSE
 - ALSO INCLUDES RAPID RUNWAY REPAIR, FIREFIGHTING, LOCAL ACTIVE DEFENSE, AND AIR BASE GROUND DEFENSE
- MORE DYNAMIC THAN PASSIVE DEFENSE
 - LOOKS TO POST-ATTACK OPERATIONS

10

ASSUMPTION:

PASSIVE DEFENSE/ATSO
PREPAREDNESS IS
ALSO CRITICAL TO
DETECTING
ACQUISITION AND USE
OF NBC

11

WHAT IS THE PROBLEM?

- PROLONGED OPERATIONS IN AN NBC ENVIRONMENT ARE DIFFICULT
 - LOGISTICS
 - COMMUNICATING/CONTROLLING
 - PSYCHOLOGICAL
 - PHYSIOLOGICAL
 - NORMAL HUMAN FUNCTIONS
 - HEAT STRESS/DEGRADED PERFORMANCE
- AIR BASES CANNOT MOVE EASILY

12

THE ATSO SOLUTION:

- EQUIPMENT
- TRAINING
 - INDIVIDUAL
 - GROUP
- ACCLIMITIZATION
- EXERCISES
- EVALUATIONS

13

MINI-HISTORY OF NATO AND NBC

- LATE 70S AND EARLY 80S
 - REACTION TO SOVIET CAPABILITIES
- RUDIMENTARY START
 - EQUIPMENT, TRAINING, EVALUATIONS
 - OFT TIMES CONCLUDED: HARD-TO-DO
 - INTERFERENCE WITH FLIGHT TRAINING
- RELIANCE ON NUC/CHEM WEAPONS
- (IRONIC) DECLINE AFTER GULF WAR

14

THE NEW NATO

- MULTINATIONAL UNITS
- DEPLOYABLE FORCES
- OUT-OF-AREA OPERATIONS
 - OFTEN BARE INFRASTRUCTURE
- FOCUS ON SOUTHERN REGION
 - OFTEN BARE INFRASTRUCTURE
- INTEGRATED MILITARY STRUCTURE
 - THE "IMS" REMAINS FUNDAMENTAL TO THE SUCCESS OF THE ALLIANCE

15

IF SUSTAINING AIR
OPERATIONS IN THE FACE
OF NBC ATTACKS WAS
TOUGH BEFORE, NOW IT
WILL BE A REAL
CHALLENGE!

16

WHAT MAKES UP "NATO FORCES"?

- HAS ALWAYS BEEN COMBINATION:
 - OF AGREED ALLIANCE GOALS, STANDARDS, AND STRUCTURES ...
 - AND NATIONAL FORCE CONTRIBUTIONS
 - NATIONS TRAIN AND EQUIP THE FORCES COMMITTED TO THE ALLIANCE
- THUS BOTH MUST BE EXAMINED

17

THE NATO STANDARDS

- STANDARDIZATION AGREEMENTS (STANAGS)
 - NUMBER IN THE THOUSANDS OVERALL
 - BUT NEED CONSENSUS AND ARE SUBJECT TO "NATIONAL RESERVATIONS"
- MANY DEVOTED JUST TO NBC
 - AND CAN BE POWERFUL BASELINES --
e.g. STANAG 2150

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STANAG 2150

- EXAMPLE OF "PRINCIPLE":
 - ORGANIZATION OF UNIT'S OVERALL NBC DEFENCE CAPABILITY IN ORDER TO ENSURE MAINTENANCE OR RAPID RESTORATION OF OPERATIONAL FITNESS WITH MAXIMUM ECONOMY OF EFFORT IN TERMS OF PERSONNEL AND RESOURCES

19

STANAG 2150 (CONT)

- EXAMPLE OF "SURVIVAL STANDARD"
 - PROPERLY DON, SEAT, CLEAR AND CHECK HIS/HER RESPIRATOR/ PROTECTIVE MASK WITHIN NINE SECONDS AND COMPLETE THE ADJUSTMENT OF THE HOOD, IF AVAILABLE WITHIN SIX SECONDS . . .

20

STANAG 2150 (CONT)

- EXAMPLE OF "OPERATING STANDARD"
 - DEMONSTRATE PROFICIENCY IN PERFORMING HIS/HER PRIMARY MILITARY DUTY, TO INCLUDE THE USE OF CREW/PERSONAL WEAPONS, WHILE WEARING THE RESPIRATOR/MASK AND NBC PROTECTIVE CLOTHING FOR EXTENDED PERIODS.

21

WISH I HAD A GOOD
TRANSITION SLIDE ABOUT
NOW . . .

22

NATO'S INTEGRATED MILITARY STRUCTURE

- REVIEW OF KEY IMS (AIR) LEVELS
 - HQ NATO
 - SHAPE
 - ALLIED AIR FORCES CENTRAL EUROPE AT RAMSTEIN (NATO TACEVAL)
 - ACE RAPID REACTION FORCES (AIR)
 - COMBINED AIR OPERATIONS CENTERS
 - THE NATIONAL CONTRIBUTIONS
- LOWER EMPHASIS DOWN THE LIST

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THE NATO TACTICAL
EVALUATION SYSTEM
(TACEVAL): HIGH
STANDARDS AND
MULTINATIONAL,
INTEGRATED INSPECTION
TEAMS -- "THE HAMMER"

24

NATIONAL EFFORTS IN NBC PREPAREDNESS OF AIR FORCES ...

25

NETHERLANDS

- TROOPS MUST HAVE MAX PROTECTION AGAINST NBC EFFECTS
- DON'T COUNT ON INFRASTRUCTURE AT DEPLOYED SITES
- EXTENSIVE TRAINING FOR ALL RNLAf MEMBERS IN NBC DEFENSE
- USE OF THE "LIVE AGENT" TRAINING FACILITY AT FT MCCLELLAND, AL.

26

FRANCE

- FRENCH ADOPTING MANY NATO NBC STANAGS AND PROCEDURES
- ABILITY TO RECOVER AIR OPS WITHIN BORDERS IS GOOD
- BUT DEPLOYED CAPABILITY IS DECREASING AS FAF SHRINKS
- EXERCISES/EVALUATIONS NOW LESS REALISTIC IN NBC PLAY

27

UNITED KINGDOM

- STRONG ATSO TRADITION DATING FROM "RAF REGIMENT" IN WWII
- STILL A STRONG ENTRY LEVEL NBC TRAINING PROGRAM
- ALSO EMPHASIZED IN BASE COMMANDER'S COURSE
- SEVERE MONETARY CUTS HAVE HOBBOLED EXERCISES/EVALUATIONS

28

GERMANY

- GAF WANTS FORCES NBC-READY
 - CONCERNED WITH DEPLOYMENTS JUST TO SHOW THAT FRG IS MAJOR ACTOR
- GAF CSAF IS NOT A FLYER
 - HAS DEVOTED 1000 TROOPS TO ATSO
- SENIOR OFFICERS TO NBC SCHOOL
- EXPANDED USE OF FT MCCLELLAND
- BUT ALSO SKIMPING ON EXERCISES

29

UNITED STATES

- NBC HISTORICALLY OFF THE SCOPE
 - NOW HANDED TO CIVIL ENGINEERS
- USAF HAS IMPRESSIVE ATSO DATA
 - SALTY DEMO AND DESERT STORM
- BUT GENERALLY LOW LEVEL OF GROUP AND INDIVIDUAL TRAINING
- CURRENT CSAF HAS RENEWED FOCUS ON AIR BASE OPERABILITY

30

WHERE DOES THIS LEAD US?

31

THE NOT-SO-BRIGHT SPOTS

- TRADITIONALLY LOW EMPHASIS BY THE UNITED STATES AIR FORCE
- DECLINING CAPABILITIES IN KEY ALLIES (FRANCE AND UK)
- DECREASED EMPHASIS IN IMS
 - PARTICULARLY THE NATO TACEVALS
- ATSO: A PERISHABLE SKILL THAT IS BEING DECREASINGLY PRACTICED

32

THE BRIGHT SPOTS

- 1995 SHAPE MESSAGE: "ATSO IS VITAL THIRD LEG ALONG WITH OPS AND LOGISTICS"
- GERMAN AND DUTCH COMMITMENT TO NBC DEFENSE PREPAREDNESS
- INTEREST OF USAF CHIEF OF STAFF
- RESULTS OF NATO WORKING GROUPS

33

THE BOTTOM LINE:
NBC PREPAREDNESS WAS
ALREADY AN AREA
TRADITIONALLY
NEGLECTED. IT IS NOW
VICTIM OF BUDGET AND
PERSONNEL CUTBACKS
AND . . .

34

THREATENS TO KEEP THE
ALLIANCE'S AIR FORCES
FROM BEING ABLE TO
CONDUCT SUSTAINED
OPERATIONS IN NBC
ENVIRONMENTS THUS . . .

35

LOSING ONE OF NATO'S
TOOLS FOR BOTH
DETERRENCE AND
PROTECTION AT THE TIME
THE POLITICAL RHETORIC
IS HIGHEST ABOUT
COUNTERING
PROLIFERATION

36

THE DANGER:
THE ALLIANCE COULD END
UP "SELF-DETERRED" IF IT
CANNOT CONVINCINGLY
DEMONSTRATE THAT ITS
AIR FORCES ARE READY TO
SUSTAIN OPERATIONS IN
ANY SITUATION.

37

ARTHRA NIQSTNS?

38

I SAID:
"ARE THERE ANY
QUESTIONS?"

39

SITES SELECTED FOR RESEARCH

- NATO
 - HQ NATO IN BRUSSELS
 - SHAPE IN MONS
 - COMBINED AIR OPS CENTER (CAOC) AT
SENBACH AIR BASE
- FRANCE
 - MINISTRY OF DEFENSE
 - HQ FRENCH AIR FORCE

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SITES SELECTED FOR RESEARCH (CONT)

- GERMANY
 - HQ GERMAN AIR FORCE
- NETHERLANDS
 - HQ ROYAL NETHERLANDS AIR FORCE
- UNITED KINGDOM
 - STO CENTRE, RAF HONINGTON
- UNITED STATES
 - AIR STAFF, EUCOM, USAFE, ACC, AFMC

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Briefing
Russian–American Cooperation in WMD Counterproliferation

Capt Richard Dabrowski

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Russian-American Cooperation in WMD Counterproliferation

Capt Richard Dabrowski, USAF

Introduction

- U.S. Counterproliferation Policy
- U.S. Policy Towards Russia
- Coalition Implementation

Russian Views

- Russian FIS Report
- Pro-Western
- Mixed
- Anti-Western
- Conflict in Chechnya

Likelihood of Success

- Hypothetical WMD Contingencies
 - » Rogue States
 - » WMD-Armed Terrorists
 - Chemical
 - Nuclear
 - Biological

Likelihood of Success (cont.)

- Types of SOF Missions
 - » Detection
 - » Interdiction
 - » Sabotage

Likelihood of Success (cont.)

- Criteria for Effective SOF Missions
 - » Military
 - » Short-Term Political
 - » Long-Term Political

Models for SOF Cooperation

- **Precedents**
 - » Joint Peacekeeping
 - » Cooperative Threat Reduction Program
 - » Lab-to-Lab Initiative
- **Russian Models**

Models for SOF Cooperation

(cont.)

- **U.S. Models**
 - » Nuclear Emergency Search Team
 - » Special Mission Units
 - » Commandant's Warfighting Lab

Frameworks for Cooperation

- **Multinational**
- **Bilateral Russian-American**
- **Confidence and Security Building Measures**

Conclusion

Any Questions?

Briefing
Attacking the Infrastructure: Exploring Potential Uses of
Offensive Information Warfare

Lt Donald E. Elam

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Attacking the Infrastructure: Exploring Potential Uses of Offensive Information Warfare

LT Donald E. Elam, USN
Naval Postgraduate School

NAVY 20

AIR FORCE 17

2

Preparation

- Conducted review of the literature
- Attended NDU COI
- Visited and interviewed many of the key players:
 - OSD, J-3, J-6, NSA, CIA, N64, Air Staff, FIWC, USACOM, NDU, etc.
- Funding
- Disclaimers

3

Structure of Thesis

- Introduction
- Defining Information Warfare
- Information Warfare Organizations
- Information Warfare and Technology
- Offensive Information Warfare (OIW)
- The Infrastructure and OIW
- OIW Issues
- Conclusion/Recommendations

4

Introduction

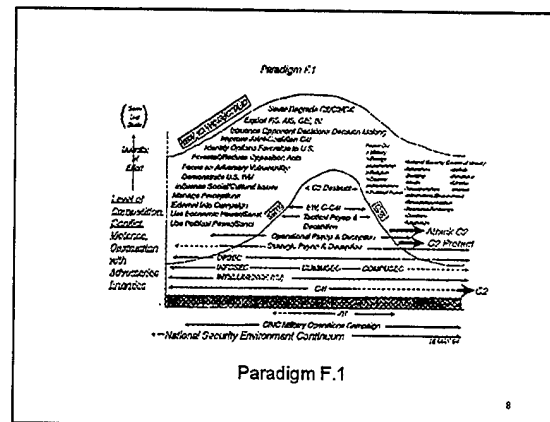
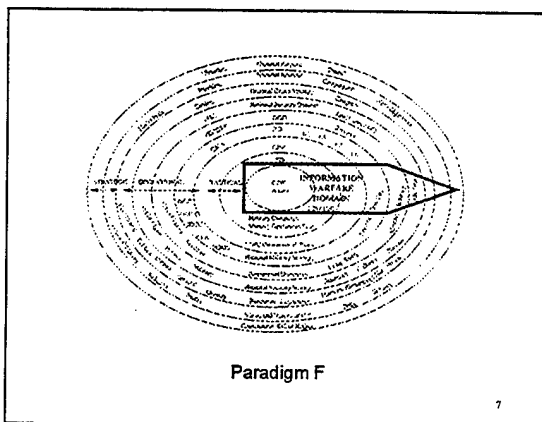
- The changing face of warfare
- The Third Wave
- Traditional views
- Role of technology
- Importance of cultural dimension
- Centers of Gravity
- The importance of Information Warfare

5

Defining Information Warfare

- The need for a definition
- The difficulty of obtaining a definition
- Examples of definitions
- Coming to grips with a definition
- A possible answer: Paradigm F

6



Information Warfare Players

- A crowded playing field
- A snapshot
- Problems and answers

9

MAJOR CATEGORY	SUBCATEGORY	EXAMPLES
International	e.g., Canada	e.g., Dept. of National Defence
National	Public	Academia
	Private	Public Interest Groups
	Media	Industries
		Associations/Alliances
		Subversive Elements
Federal Government	Executive Branch	State OF Defense
		Other Departments
		Intelligence Group
		Advisory Commissions
	Independent Establishments	e.g., CIA, FCC, FEMA, etc.
	Legislative/Judicial	e.g., Senate, House of Representatives, etc.
State & Local Governments	e.g., Texas	e.g., Dept. OF Transportation

Table 2. Information Warfare Players (After Ref. 28)

10

CATEGORY	SUBCATEGORY	EXAMPLES
Advisory & Policy Groups	National Security Council	Nat'l Information
	OSCE	Infrastructure Task Force
	National Economic Council	N/A
	Nat'l Sec. Television	N/A
	Advisory Committee	N/A
Departments	Office of Science and Technology Policy	N/A
	Commerce	Nat'l Institute of Standards and Technology
	Defense	NSA, EOD, NSA, IRPA, etc.
	Energy	Service Table, etc.
	Justice	PHL (Copyright Crime Unit)
	State	Bureau of Diplomatic Sec.
	Transportation	Coast Guard
	Treasury	TLS, Secret Service

Table 4. Executive Branch Information Warfare Players (After Ref. 29)

11

SECTION	ORGANIZATION
Army Staff	Army's Secretary of the Army (Support/Development/Operations) (SAO/DA)
	Office of the Deputy Chief of Staff for Operations (ODCS/OPS)
	Office of the Deputy Chief of Staff for Intelligence (ODCS/INT)
	Office of the Director of Information Systems for the Army (ODISA/IS)
Major Command	Intelligence and Security Command (INSEC/IN)
	Information Systems Command (INSEC/IS)
Other Element	Training and Doctrine Command (TRADOC)
	Land Information Warfare Activity (LIWA)
	Psychological Operations Command (PSYOPCOM)
	Special Operations Command (SOPCOM)

Table 5. Army Information Warfare Players (After Ref. 28)

12

LEVEL	ORGANIZATION	PRIMARY IW MISSION
Administrative	NAVSTICORU	Executive Agency
	NSA	Plans & Policy
	NSA	Requirements & Programs
	NSA	Doctrine
	CMC	Education & Training
Operational	NSA/CSS	Assess Host C2/C3 in PW/C2W operations
	NSA/CSS	Develop IW technologies
	NSA/CSS	Provide intelligence support for PW/C2W

Table 6. Navy Information Warfare Players (After Refs. 29, 42, and 43)

13

PRIMARY MISSION COMPONENT	ORGANIZATION/INNOVATION
Doctrine & Administration	NSA, ASD, NSR, SC
Programs	NSA/CSS, NSA/CSS, Naval Lab, ESC
Support	ASCC, ALA, ASIRAC, IWSA
Education	CMC, IW Academy, NSC, SC

Table 7. Air Force Information Warfare Players (After Refs. 29, 34 and 43)

14

IW and Technology

- Technological revolution
- The role of technology in IW
- Enabling technologies for IW

15

CATEGORY	SUBCATEGORY	EXAMPLES
Computers & Networks	Component Advances	Parallel computing, Desktop VTC
	Networks	Local Area Net, Wide Area
	Internet	Internet
	Architectures	FTD, NII, DDI
Telecommunications	Transmission	DSM, Microwave, Fiber
	Switching	DSM, VSAE, TDM/ATM
	Cellular	PCS, GSM, ISM
	Other Protocols/Technologies	Novel, Non-Virtual, Optical
Emerging Technologies	Sensors and Spies	Visual, Non-Visual, Optical
	Security	Firewall, Black Box, Firewall
	Intelligence	Intelligence, Image Tech.
	Emerging Technologies	Wireless, PLAT, SONET, ATM

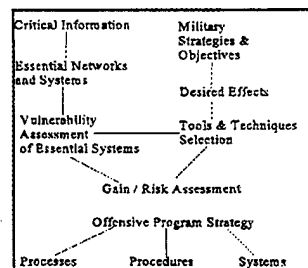
Table 8. Enabling Information Warfare Technologies

16

Offensive Information Warfare

- Engaging in Offensive IW (OIW)
- An OIW Strategy
- Targets and COGs
- Tools and Techniques
- Considerations

17



OIW Strategy Flowchart

18



19

Table 2. Officers PW Test and Interview.

20

Table 10. Prudent Portfolio Scheme Yr 12DW.

21

- The role of the infrastructure
- COGs revisited
- The need for a template
- Attacking the infrastructure
- Considerations

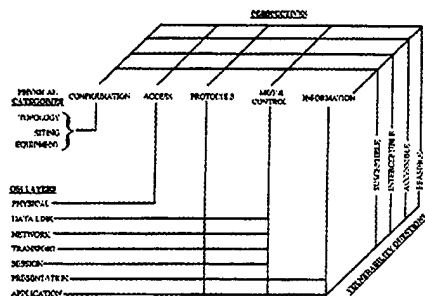
22



23

Table 11. Offshore laboring workers' information sources (continued)

24



Information Warfare Issues

- Deciding to use Offensive IW
- Major Issues
- Other Issues and Considerations

CATEGORY	SUB-CATEGORY	ELEMENTS
Major Issues	Political	N/A
	Legal	Domestic International
	Economic	N/A
	Medical and Physical	N/A
	Military	State of Vietnam State of Afghanistan/Taliban Time base to Thailand Model set of Commanders 2015-2020 Levels of Attacks Infrastructure Support Collateral Damage
Other Issues	Miscellaneous	Bioprocesses
		Coordination
		Communication
		Information Mobility
		Collaboration

Conclusion/Recommendations

- Education
- Definition
- Organization
- Technology
- Weapons and Tactics
- Infrastructure
- Issues

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Briefing
***Military Responses to Information Warfare Violations of US
National Sanctuary***

**Mr. Ronald S. Gross
LCdr William J. Fulton
Maj Michael L. Muzzerall**

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Military Responses to Information Warfare Violations of US National Sanctuary



Mr. Ronald S. Gross
LCdr William J. Fulton
Maj Michael L. Muzzerall



1

Introduction

- US has had a natural sanctuary against physical attacks
- Reactions to Past Violations
- Information Warfare (IW) violations
- What could/ would/ should DoD do in response to IW violations?

2

Outline

- Background
- Definitions of IW and National Sanctuary
- IW and the Law
- Possible DoD Actions
- Conclusions and Recommendations

3

Background

- DoD Role to protect the US from attack
 - physical Vs cyber attack
- DoD action limited by national and international laws
- Team merely collated existing data into one source

4

Information Warfare

“... it is those actions taken to achieve information superiority in support of national military strategy by affecting adversary information and information systems while leveraging and defending our information systems.”

DoDD 3600.1

5

Elements of IW

- Command and Control Warfare
- Information based Warfare
- Electronic Warfare
- Psychological Warfare
- Synthetic Theater of War
 - Hacker Warfare
 - Information Blockade
 - Cyberwar

6

Concerns

- Armed attack is internationally recognized.
 - US military can respond
- The concept of “War” is disappearing
 - relating IW to act of war is irrelevant
- IW could be seen as act of aggression
 - “use of any weapons by a State against the territory of another” UN resolution
- How to deal with cyber attacks?

7

Elements of an Information Technology (IT) System

- people (operators)
- hardware
- software
- telecommunications
- facilities (housing all of the above elements)
- data

8

US National Sanctuary

- Protected by Atlantic and Pacific
- Friendly neighbours in Canada and Mexico
- ICBM defense and mutual deterrence provided a nuclear sanctuary
- **Is there an IW sanctuary?**

9

“In cyberspace, traditional geographic borders have disappeared, national legal regulations do not apply, and time is irrelevant.”

HQ USAF

Joint Forces Air Component Commander (JFACC)
Primer, February 1994

10

Cybersanctuary

US Defense agencies are developing defensive measures against the information warrior that will provide a virtual sanctuary or cybersanctuary.

Maj Spano, JCS (J6)

11

IW Legal and Social Issues

- foreign or domestic origin
- individual (societal) right to privacy
- applicability (or lack of) international, federal, or state law
- treaties and agreements to which the US is a party
- use of force issues
- acts of war and acts of aggression
- the issue of self defense
- whether one is engaging in active or passive defensive IW, or pursuing offensive IW

12

Legal Limits to Defensive IW

- Passive (no legal problem)
 - back up systems
 - concealment
 - password entry
- Active (may require NCA resolution)
 - automatic counter-attack
 - damage to intruding systems

13

Time Appreciation

- US government agencies must follow laws
- It takes time (hours or days) to get court approval/permission
- Info Warrior attack is over in minutes

14

National Policy on IW

- under development by DISA, NSA, FBI
- currently no coordinating policy for civilian and military organizations
- detailed contingency planning impossible without well defined national policy

15

Legal Bottom Line

Decisions to engage in acts whose legality (national or international) is in any way questionable must be made at the highest levels of government.

Col Phillip Johnson

1995 *Legal Aspect of IW Symposium*, at Maxwell AFB

16

DoD Problem

Within the current legal framework, would, should or could DoD respond to unauthorized intrusions into this new cybersanctuary?

17

Definitions

- **should** - an obligation, duty, propriety, necessity
- **would** - an expression of wish
- **could** - a shade of doubt or a small degree of ability or possibility

18

Limitations to DoD Response

- Society fears martial law
- Federal statutes and treaties
- US Code 18 prohibits
 - search of dwelling without a warrant
 - the use of the military as *posse comitatus* except as permitted by Congress or the Constitution

19

Military Responses

- intelligence gathering
- surveillance
- back hack - tracing the source of the attack
- retaliatory strike - not necessarily in kind; could be jamming, physical or electronic destruction, deception

20

Threat perception depends upon a combination of three factors:

- US level of security interest threatened or attacked
- Targeted areas or groups
- Attacker

21

Security Interest & Response

- Core - must protect American people & territory; military should intervene
- Intermediate - must protect American way of life; military should intervene
- Peripheral - military would or could be employed

22

Targeted Groups or Areas

- Business - domestic businesses that are the foundation of the economy
- Government - government functions, leadership, and agencies (DoD)
- Econo-technical infrastructure - banking, accounting, communication systems that trade and banking use

23

Considerations

- Attacks against business are normally considered a crime (a peripheral interest)
- Can cross over security interest areas and become a much more important concern

24

Wholesaler Order is Changed

ORIGINAL

- Item: 12344567
- Amount: 10,000,000
- Req'd Date: 10 Jan XX

MODIFIED

- Item #: 12345567
- Amount: 1,000,000
- Req'd Date: 10 Jun XX

25

So What??

- An order for 10 million lbs of beans for the deployed US Army required by 10 Jan has now become an order for 1 million pairs of earmuffs to be delivered in June
- A peripheral interest has just become a core interest worthy of a military response

26

Attacker is Insider or US Citizen

- Attacks normally seen as criminal acts under existing laws
- Could involve Interpol
- If core or intermediate interests involved then military should be made available to support the law enforcement agencies

27

Foreign Attacker

- | Individual | State Sponsored |
|--|--|
| <ul style="list-style-type: none"> • Criminal act • Military <u>could</u> or <u>would</u> support law enforcement • Core or intermediate interests may increase chance of military action | <ul style="list-style-type: none"> • aggression or terrorism • attacks on core or intermediate <u>should</u> have a direct military response |

28

Intent of Attacker

- Terrorism -
 - if state sponsored should get a military response (raid on Libya)
 - by individuals is just a crime (Oklahoma)
- Individual seeking personal gain -
 - stealing cellular phone time, or accessing ATMs. These are criminal acts. Military could or would assist but is not compelled to act

29

US Military Responses to IW (Page 1 of 2)

	Core and Intermediate Interest		
	Business	Government	Extra-technical Infrastructure
Insider Attacker or State Sponsored	Attack is considered to be a criminal act. Military <u>should</u> support law enforcement or additional security agency, such as the FBI or CIA.	Attack is considered to be a criminal act. Military <u>should</u> support law enforcement or additional security agency, such as the FBI or CIA.	Attack is considered to be a criminal act. Military <u>should</u> support law enforcement or additional security agency, such as the FBI or CIA.
Foreign Attacker - State Sponsored	Attack is considered to be a criminal act. Military <u>should</u> support law enforcement or additional security agency, such as the FBI or CIA.	Attack is considered to be a criminal act. Military <u>should</u> support law enforcement or additional security agency, such as the FBI or CIA.	Attack is considered to be a criminal act. Military <u>should</u> support law enforcement or additional security agency, such as the FBI or CIA.
Foreign Attacker - Non-State Sponsored	Attack is considered to be a criminal act. Military <u>should</u> support law enforcement or additional security agency, such as the FBI or CIA.	Attack is considered to be a criminal act. Military <u>should</u> support law enforcement or additional security agency, such as the FBI or CIA.	Attack is considered to be a criminal act. Military <u>should</u> support law enforcement or additional security agency, such as the FBI or CIA.
US Citizen Attacker	Attack is considered to be a criminal act. Military <u>should</u> support law enforcement or additional security agency, such as the FBI or CIA.	Attack is considered to be a criminal act. Military <u>should</u> support law enforcement or additional security agency, such as the FBI or CIA.	Attack is considered to be a criminal act. Military <u>should</u> support law enforcement or additional security agency, such as the FBI or CIA.

30

US Military Responses to IW (Page 2 of 2)

	Insider	Peripheral Interest	Foreign
Attacker	A threat is considered to be a civil crime; Military DOP would or could support local law enforcement as national security agency (officially)	A threat is considered to be a civil crime; Military DOP would or could support local law enforcement as national security agency, such as the FBI or CIA	A threat is considered to be a civil crime; Military DOP would or could support local law enforcement as national security agency, such as the FBI or CIA
State Sponsored	Both cases would be an international crime; Military DOP would or could support a national or international law enforcement or security agency, such as Interpol	If the attack results in a person's death, it would be an international crime; Military DOP would or could support a national or international law enforcement or security agency, such as Interpol	If the attack results in a person's death, it would be an international crime; Military DOP would or could support a national or international law enforcement or security agency, such as Interpol
- Non-State Sponsored		If it is a non-state sponsored act, it would be an international crime; Military DOP would or could support a national or international law enforcement or security agency, such as Interpol	If it is a non-state sponsored act, it would be an international crime; Military DOP would or could support a national or international law enforcement or security agency, such as Interpol
US Citizen Attacker	A threat is considered to be a civil crime; Military DOP would or could support local law enforcement as national security agency	A threat is considered to be a civil crime; Military DOP would or could support local law enforcement as national security agency, such as the FBI or CIA	A threat is considered to be a civil crime; Military DOP would or could support local law enforcement as national security agency, such as the FBI or CIA

31

Conclusions

- Concept of national sanctuary is no longer valid
- IT systems attacks viewed as crimes
- Military intervention viewed as martial law
- Limited to defensive action
- Lack of national and international IW policy limits DoD responses

32

Recommendations

- **Promulgate National and DoD policy**
- **Identify civilian IT systems that support US national security**
- **Identify IT systems that are of vital interest to the US**

33

Recommendations (cont'd)

- **Prioritize critical systems** in order to allocate system security resources
- **Provide a guide** for NCA and DoD to determine when the military should, would or could be used to respond to IW attacks

34

Questions?



35

Briefing
Information Warfare Delphi
A Naval Postgraduate School Thesis

Capt Roger Thrasher

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Information Warfare Delphi

A Naval Postgraduate School Thesis

Capt Roger Thrasher, USAF

Rome Laboratory
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1

Outline

- Research Motivation
- Research Questions
- "Delphi" Approach
 - ↳ Methodology
 - ↳ Participants
- Results and Conclusions
- Summary

2

Research Motivation

- Information Warfare (IW) is a key part of the on-going Revolution in Military Affairs (RMA)
- RMAs typically have four components
 - ↳ *Technological Change*
 - ↳ *Systems Development*
 - ↳ *Operational Innovation*
 - ↳ *Organizational Adaptation*
- Each component must be accomplished to fully realize the benefits of an RMA
- My research focused on the first two areas

3

Research Areas

- Primary
 - ↳ Assess the Impact of IW on the Acquisition System
 - Subsidiary
 - ↳ Characteristics of IW
 - ↳ Technology of IW
 - ↳ Implications of Commercial Dependence
 - ↳ *Future Technologies & Directions for Research*
 - ↳ *An Information Age Acquisition Organization*
 - ↳ *Changes in the Acquisition Process*
- } To set the stage

4

"Delphi" Approach

- Loosely based on RAND's Delphi technique
 - ↳ Consult subject matter experts on a particular topic
- Ask questions in the subsidiary research areas
- Not focused on reaching a consensus
- Try to cross-fertilize among the participants
- Conducted entirely via electronic mail

5

Participants

- Mid to senior level military officers
- DoD civilians
- "Real" civilians
 - ↳ Information Warfare and computer experts
 - ↳ Authors
 - ↳ Corporate officials

6

Participant Names

- Col (Ret) Al Campen,
 - ↳ AFCEA, The First Information War
- VADM Arthur Cebrowski, USN
 - ↳ J6
- Peter Cochrane
 - ↳ Director, British Telecom Research Lab
- Dr Fred Cohen
 - ↳ Protection and Security on the Information Superhighway
- James Dunnigan
 - ↳ Digital Soldiers
- LCDR(N) Robert Garigue, Canada

7

Participant Names

- Dr Fred Giessler
 - ↳ National Defense University
- Brig Gen David Gust, USA
 - ↳ Program Executive Officer - Intelligence & Electronic Warfare
- CDR (Ret) James Hazlett
 - ↳ Science Applications International Corporation
- Ken King
 - ↳ Digital Equipment Corporation
- Dr Fred Levien
 - ↳ Naval Postgraduate School
- Dr Martin Libicki
 - ↳ National Defense University, What is Information Warfare?

8

Participant Names

- CDR Michael Loescher, USN
 - ↳ Office of the Dep Asst Sec Navy (C4I/IW)
- Mr Larry Merritt
 - ↳ Technical Director, Air Force Information Warfare Center
- Dr David Probst
 - ↳ Concordia University, Canada
- Winn Schwartz
 - ↳ Information Warfare: Chaos on the Electronic Superhighway
- Robert Steele
 - ↳ CEO, Open Source Solutions
- Col David Todd, USAF
 - ↳ Chief of Technical Plans, HQ USAF/XOXT

9

Results

- Delphi gave a broad range of answers
- First task was to find common threads
 - ↳ Sometimes difficult to do
- Second task was to synthesize
 - ↳ Based on Delphi responses and other research

10

Conclusions

- Characteristics of Information Warfare
 - ↳ It's about attacking and defending information functions
 - ↳ Not about using information to enhance warfare
 - ↳ That is "Information-Based Warfare"
 - ↳ Has its own unique rules and limitations
 - ↳ "No forced entry in cyberspace"
- Technology of Information Warfare
 - ↳ Dependent on and enabled by technology
 - ↳ Largely based on commercial technologies
 - ↳ Information Warfare "systems" are like C4I systems
 - ↳ Collections of hardware, software, wetware, etc.

11

Conclusions

- Implications of Commercial Dependence
 - ↳ Most technologies available to anyone with money
 - ↳ Military has little impact on the commercial market
 - ↳ Must strongly engage with the commercial world
 - ↳ To make our needs known
 - ↳ To learn from them
- Future Technologies & Directions for Research
 - ↳ Commercial world will provide for many of our needs
 - ↳ Military should focus on unique areas not likely to be addressed in the world of commerce

12

Conclusions

- An Information Age Acquisition Organization
 - ↳ Decentralization of acquisition may be possible
 - Requires good standards and architectures
 - ↳ Need user-level "information technologists"
 - Who understand both the warfighter and technology
- Changes in the Acquisition Process
 - ↳ Focus on functions, services and integration
 - ↳ Use an incremental and evolutionary approach
 - ↳ Use information technology to do "distributed, collaborative" acquisition
 - ↳ Take advantage of leasing and discarding when smart
 - ↳ Assess Information Warfare vulnerabilities during design

13

Summary

- The on-going RMA is vital to our future
 - ↳ Information Warfare is a key part of the RMA
- Realizing our Information Warfare potential is partially dependent on effective research and acquisition
- Acquisition community changes may be required
 - ↳ Research & technology focus
 - ↳ Acquisition organizational approach
 - ↳ Acquisition process changes

14

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Briefing
Information Warfare Units
Structure, Composition, and Mission

Maj Gregory B. White

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Information Warfare Units Structure, Composition, and Mission

Major Gregory B. White
Department of Computer Science
United States Air Force Academy

INSS Research Projects

- IW Units: Structure, Composition, and Mission
- The Impact of the Media and Direct Broadcasting Systems on the Nature and Conduct of Military Operations
- Methods to Address Indications and Warnings of Information Attacks
- Department of Defense Responsibilities in Protecting the National Information Infrastructure
- Opportunities for the Intelligence Community in an Information Warfare Environment

Information Warfare

Definition

- Asst. Sec. of Def. Emmet Paige
 - Actions taken to achieve information superiority in support of national military strategy by affecting adversary information and information systems while leveraging and defending our information and systems
- AF *Cornerstones* Document:
 - Any action to deny, exploit, corrupt, or destroy the enemy's information and information functions; protecting ourselves against those actions; and exploiting our own military information functions

Mission - Protect DII

- Over 90% of the DII consists of UNCL
 - US Senate Subcommittee on Security in Cyberspace
- 1990/91 attack from Netherlands
 - 34 sites; searches: nuclear, weapons, missile, Desert Storm
- 1994 Rome Lab attack
 - Took 3 days to be noticed, 2 more to regain control
- 1995 NRL and Los Alamos attack
 - sites contained info on aircraft design, satellite engineering, and radar technology

Mission - Protect NII

- Can an attack on info processing systems be considered an act of war?
 - Article 51, UN Charter states:
 - Nothing in the present Charter shall impair the inherent right of individual or collective self-defense if an armed attack occurs against a Member of the United Nations
- What is an “armed attack”?

Mission -- Protect NII

(cont)

- Article 41 of UN Charter cites the following as examples of “measures not involving the use of armed force”:
 - complete or partial interruption of economic relations and of rail, sea, air, postal, telegraphic, radio, and other means of communication
- “Defense in kind” generally accepted

Mission -- Protect NII

(cont.)

- Is protection of NII similar to “war on drugs” ?
 - Title 18, US Code, Section 1385--*Posse Comitatus*
 - military not to be used to enforce civil law
 - Title 10, US Code, Chapter 18, Military Support for Civilian Law Enforcement
 - gives limited authority for use of federal military
 - prohibits military organizations from directly participating in arrests, searches, seizures, etc.

Mission -- Protect NII

(cont.)

- 1986 NSDD 221
 - prescribed a more active role to support DLEA
 - Serve as lead for detecting and monitoring air and maritime transit of illegal drugs
 - Integrate those C3I assets of the federal government dedicated to drug interdiction into an effective network
 - Approve and fund state plans for expanded use of the National Guard in support of DLEA interdiction and enforcement operations

Mission -- Protect NII

(cont.)

- Joint Pub 3-07.4 describes DoD role in counterdrug operations--support civilian agencies
 - reconnaissance
 - maintenance
 - intelligence
 - analysis
 - linguistic support
 - equipment
 - facilities and training

Mission -- Protect NII

(cont.)

- Most DoD support conducted outside U.S.
- 1986 Operation Blast Furnace
 - Bolivian Operation against processing facilities
- 1993 Minnesota National Guard
 - remote observation post (3 days)
 - Methamphetamine lab (80 lbs of drugs)
- Training
 - Regional Counterdrug Training Academy (NAS, Meridian MS)
 - National Interagency Counterdrug Institute (CA NG)

Mission -- Protect NII

(conclusion)

- Assume similar role as in counterdrug
 - Serve as lead for detecting and monitoring *data transmissions* of illegal *hacker activity*
 - Integrate those C3I assets of the federal government dedicated to *information operations* into an effective network
 - Approve and fund state plans for expanded use of the National Guard in support of *information* operations

Mission -- Intelligence

- Two aspects
 - use of IW technology to gather and disseminate intelligence on traditional intelligence targets
 - gather intelligence on IW targets
- Network Mapping
- Open Source ‘explosion’
- Global access to ‘virtual’ world
- Indications & Warnings

Mission -- Media/Direct Broadcasting

- Three assumptions about military and media
 - The media will be inescapable
 - The media will be international in nature and not 'controllable'
 - The type of future conflicts the U.S. will be involved in will be of a wider variety and may occur anywhere in the world
- Impact during preconflict operations
 - Security paramount--element of surprise gone
- Shaping of public opinion

Mission -- Media/Direct Broadcasting

(cont.)

- Haiti

- *the Haitian dictator judged the likely U.S. reaction in the wake of revulsion at the video-tape of Rangers being killed and mutilated in Somalia. He optimized his political-military moves to forestall U.S. intervention by having a handful of rabble assemble on a pier, mug angrily-on-cue for global TV while waving English-language placards. He thus turned away a U.S. warship--on a UN mission--with nothing more than the video of an alleged mob that generated the perception of imminent bloodshed projected and amplified by TV. The perception was worsened by video coverage of the warship sailing away.*

- Chuck de Caro, "Softwar"

Mission -- Media/Direct Broadcasting

(cont.)

- Kuwaiti

- *ABC's 20/20 reporter John Martin demonstrated that a Kuwaiti government-backed organization hired the American public relations firm Hill & Knowlton to hype the story of Iraqi soldiers yanking Kuwaiti babies out of incubators. It turns out that the eyewitness--who's name was not disclosed at the time of the Senate hearings--was the 15-year old daughter of the Kuwaiti Ambassador to the U.S. Martin's investigation found little proof that what Nayirah al-Sabah said was anything more than propaganda. At the time, however, the perception was strong enough to get President Bush to mention the 'incubator atrocities' eight times in 44 days and strong enough for seven Senators to mention the incident during debate over the war. (Note that the war resolution passed by only five votes.)*

- Chuck de Caro, "Softwar"

Mission -- Media/Direct Broadcasting

(cont.)

- Iraq

- *In the run-up to the Gulf War, Saddam Hussein got the maximum throw-weight from the global media. He dressed in well-tailored statesmanlike suits when being interviewed by Peter Arnett, for consumption by the Western audience; in battle dress when being photographed with his troops; and in Arab garb to maximize his effect on the regional Arab audience. He used this same technique specifically for the television cameras, by having his 'elite republican guards' fake a return to Baghdad soon after they invaded Kuwait. The perception was that the Iraqis were leaving Kuwait; the reality was that they were reinforcing their grip on that conquered country. The result was global confusion about his intentions.*

- Chuck de Caro, "Softwar"

Mission -- Media/Direct Broadcasting

(cont.)

- Instantaneous source of intelligence

- *We were watching CNN...some few seconds after H-Hour (0300, 17 January Baghdad time), I asked the rhetorical question as why weren't the lights going out? (We had scheduled ordinance on electrical facilities for 0300.) The answer came almost instantly from CNN when the commentators observed that the lights had just gone out over Baghdad but they didn't know why. But we knew! For the first time in history of war, the planners and directors of the enterprise received confirmation that their plan was working within seconds of initiation. Because of this confirmation, I knew with certainty that we had won the war and that there was nothing Baghdad could do militarily to stop us.*

- Col John Warden

Mission--Information Campaign

- Six planning concerns

- *Precisely what information is vital to friend/foe at each functional (e.g..., surveillance, C4I) and organizational (e.g..., division, airwing, naval force) echelon?*
- *What is the purpose of the vital information (e.g..., command and control, weapons targeting, diplomatic exchange)?*
- *Through what infrastructures does it flow?*
- *Where in those infrastructures is it most vulnerable?*
- *Through what means can it best be protected/exploited (e.g..., soft kill, hard kill)?*
- *If exploited, to what end (e.g..., strategic or tactical; manipulate or destroy)?*

– Michael Loescher, “The Information Warfare Campaign”



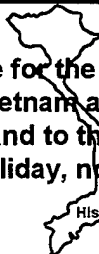
United States National Interests in the Socialist Republic of Vietnam

LTC Melvin E. Richmond, Jr.



United States National Interests in Vietnam

**"It is time for the United States to
view Vietnam as a country, not
war, and to think of Tet as a
holiday, not a battle."**

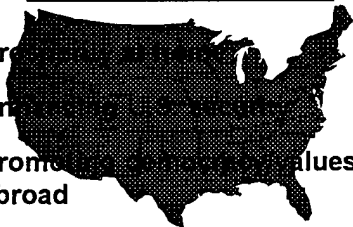


His Excellency Le Van Bang, 1993

2

President Clinton's National Security Objectives

- Promoting democracy
- Enhancing U.S. security
- Promoting human rights values abroad



2

Enhancing U.S. Security

- Security of U.S. allies (*Vital*)
- Non-proliferation of weapons of mass destruction (*Vital*)
- Regional stability (*Major*)

3

Enhancing U.S. Security

- Regional Stability
 - ◆ Prevent emergence of a regional hegemon
 - ◆ Spratly Islands dispute



4

Enhancing U.S. Security

- Regional Stability
 - ◆ Prevent emergence of a regional hegemon
 - ◆ Spratly Islands dispute
 - ◆ Slow/manage growth of regional military forces



5

Enhancing U.S. Security

- Security of U.S. allies (*Vital*)
- Non-proliferation of weapons of mass destruction (*Vital*)
- Regional stability (*Major*)
- Counter-narcotics cooperation (*Major*)
- Protection of U.S. citizens abroad (*Peripheral*)

2

Promoting Prosperity at Home

- Access to markets & raw materials (*Major*)
- Security of sea lines of communication (*Major*)



Promoting Democracy/Values

- Promotion of free-market economies (*Major*)
- Success of emerging democracies (*Major*)
- Achievement of the fullest possible accounting (*Peripheral*)
- Promote human rights (*Peripheral*)

2

Policy Recommendations

- Regional Security
- Promoting Prosperity
- Promoting Democracy/Values

12

Policy Recommendations Regional Security

- Remain involved w/SEA security fora
- Promote negotiated settlement to territorial disputes
- Promote military transparency
- Expand mil-to-mil contacts w/Vietnam
- Include Vietnam in regional military conferences

11

Policy Recommendations Promoting Prosperity

- Declare Vietnam a "friendly nation"
- Waive Jackson-Vanik
- Declare "transactions with Vietnam are in the U.S. national interest"

12

Policy Recommendations

Promoting Democracy/Values

- Continue dialogue with Vietnam on improving human rights
- Encourage compliance with the UN *Universal Declaration of Human Rights*
- Promote continued involvement of NGO's

Structure

- Information Warfare Squadrons
- Information Warfare Center
- BNCC/DNCC
- NSA
- DISA

Composition

- Numbered Air Force / MAJCOM
- Specific manning (type and number)
 - 5: Command Overhead (CC/DO/Flt CC's)
 - 6: Support (admin, personnel, contracting, ...)
 - 28: Communications/Computer
 - 9: Computer or Electrical Engineering
 - 5: Intelligence analysts
 - 3: Special Ops
 - 2: Security

Summary

- **Mission**
 - Protect the DII/NII
 - Intelligence
 - Network mapping
 - Indications and Warnings
 - Intelligence gathering
 - Deal with (use?) the media
 - Develop Information Campaign
- **Structure**
- **Composition**

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Briefing
National Defense Strategy Versus the Budget: A Guide to the
Playing Field

Dr. Peter M. Taylor

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National Defense Strategy Versus the Budget: A Guide to the Playing Field

Question:

In light of national budgetary pressures what are budget prospects for the DoD and AF?

Response:

- o Seeing diverging path between current security strategy and budget resources.
- o Will be reconciled by bringing strategy in line with resources.
- o National budget will drive strategy; strategy will drive AF's share of DoD budget.

Two Areas of Divergence

- o Growing gap between BUR strategy and annual DoD 5-year projections
 - “Bow wave” problem in the next decade
 - Procurement increases put off
 - Plans for closing shortfall:
 - savings from base closures,
 - defense budget increases in 2001-2002,
 - savings from defense acquisition reform
- Fighter force case study shows BUR force likely won’t be reached
- Estimates put gap between \$20 bil and \$100 bil - or more

- o Growing gap between DoD plans and budget realities
 - Entitlement programs will balloon relative to nation's ability to pay
 - Growing deficits projected to crash the economy by 2025
 - Balanced Budget solutions flawed
 - President's plan
 - Congressional plan
 - Examples suggest defense budgets could be lower by an accumulated \$40 - \$70 billion over the next seven years.

Budget Realities will Drive National Security Strategy

- o Survey results: Citizens sense reduced threats and want less spent on defense.
- o Studies of plausible alternative strategies show reduced defense budgets.
- o New strategy that is consistent with future budget realities will drive DoD and AF budgets.
- o Historically, AF is constant share of DoD budget.
- o More AF specifics will have to wait on the fully articulated strategy to determine how AF role has changed.

Administration Desires vs. Actual DoD Spending
(Annual FYDPs and Actual 051 Budget Authority)

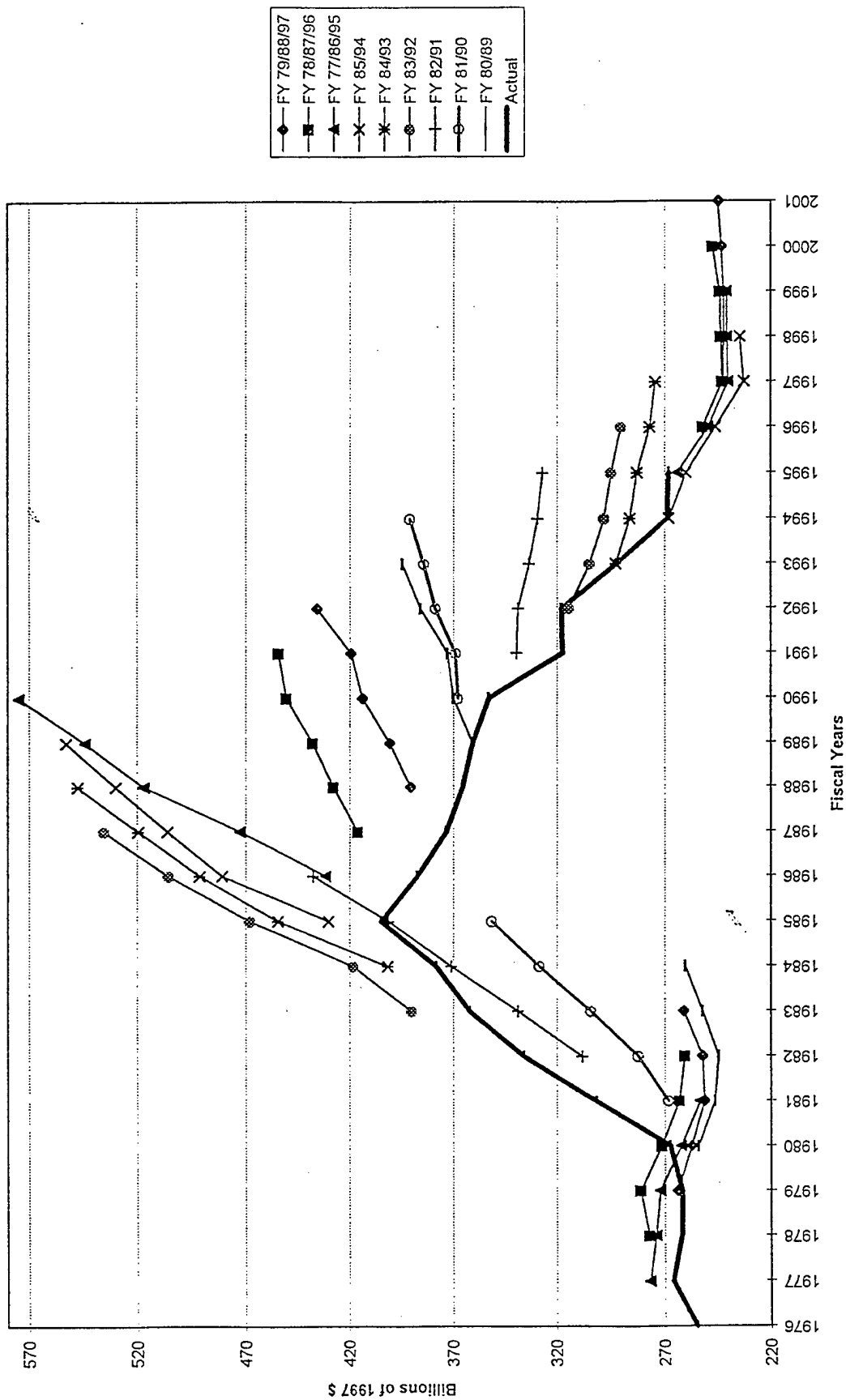


TABLE 2.
National Defense Outlays [a]
Current Dollars

<u>Fiscal Year</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	1996-2002 Savings From Baseline
Baseline	264	271	277	286	296	299	310	
President's Submission	263	261	256	258	263	267	278	157
President's Submission with Contingency savings	263	261	256	258	263	245	232	225
Congressional BR	264	264	263	267	270	270	269	136
Congressional BR with "Fair Share" Burden [b]	263	262	259	262	263	262	257	175
Constant Dollars [c]								
Baseline	264	262	260	260	261	256	258	
President's Submission	263	253	240	235	232	229	231	139
President's Submission with Contingency savings	263	253	240	235	232	210	193	196
Congressional BR	264	255	247	243	238	231	224	119
Congressional BR with "Fair Share" Burden [b]	263	254	243	238	232	225	214	153

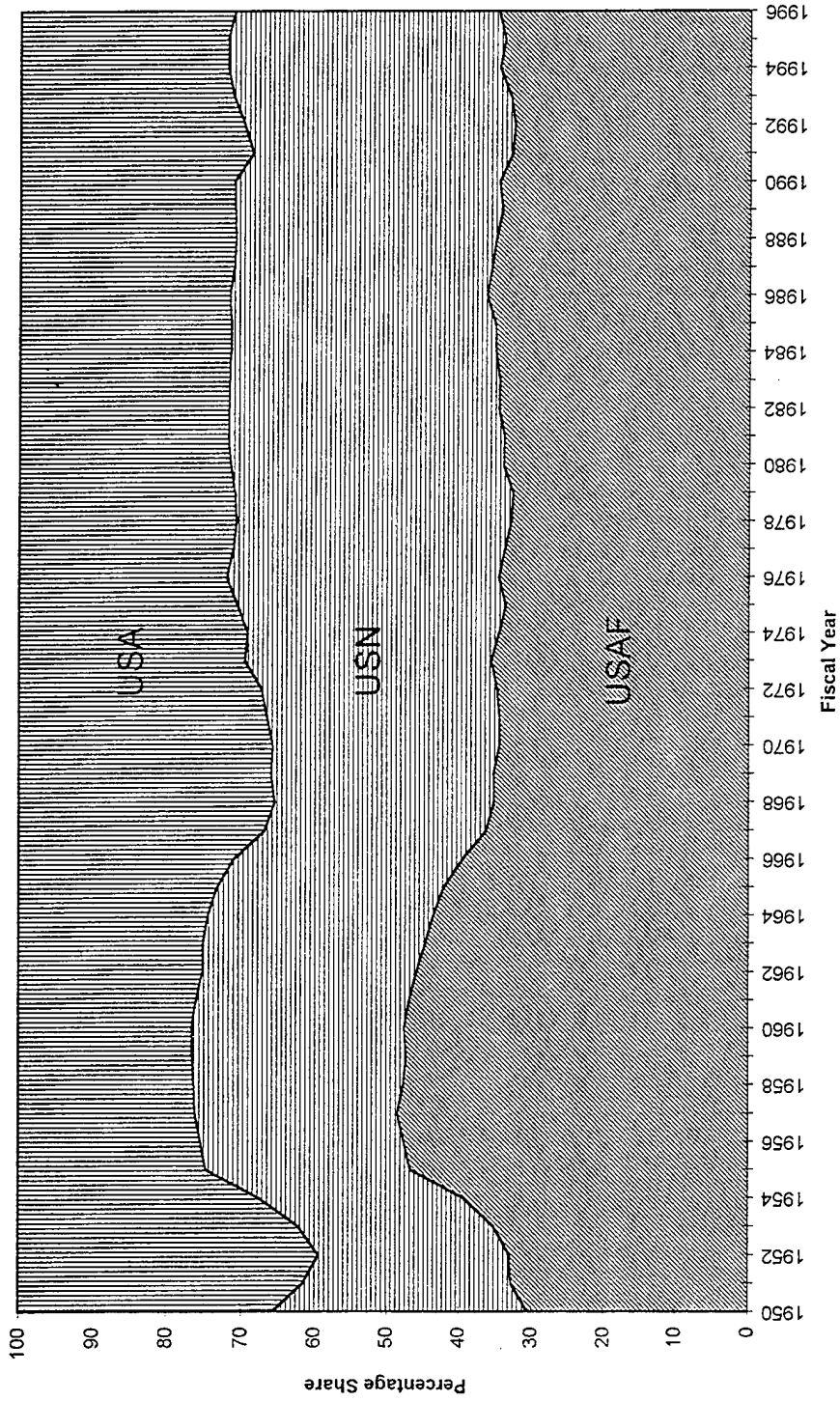
[a] Source: Reducing the Deficit: Spending and Revenue Options, CBO, August 1996.

[b] Yearly added burdens are constant percentage adjustments relative to BR levels.

[c] Using CBO inflation adjusters with 1996 as the base year. Baseline calculated so as to hold real budget authority at 1996 level.

CHART 2.

Military Service Shares of Defense Spending



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Briefing
Intervening In Chaos: A Call For New Doctrine

Maj D. Richard Simpson

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Intervening In Chaos: A Call For New Doctrine

Major D. Richard Simpson

Department of Political Science
United States Air Force Academy

1

International System - The Stage

- *Westphalian Tradition*
 - *States Primary Actor*
 - *Sovereignty, System Stability, Order*
- *Emerging Traditions*
 - *Justice-motivated Interventions*
 - *Interdependence*

2

U. S. Interests

- *Independent and Sovereign States*
- *States Primary Actor*
- *Adherence to Westphalian Norms*
- *Adherence to Human Rights Conventions*
- *Cooperation and Multi-lateralism*
- *Reality: Duality, Tension, and Flexibility*

3

Challenges to the Desired System and US. Interests

- *States violating norm of sovereignty*
- *State-sponsored or independent groups violating norm of sovereignty*
- *Disparate sub-state groups*
 - *Perpetrating grave injustices*
 - *Causing a state to fail and chaos to ensue*

4

U. S. Response

Challenge	Responsive Actor	Action	Recipient Actor
(1)	State	Destructive force	State
(2)	State	Constructive force Destructive force	Assisted state Insurgency group
(3)	State	Constructive force Destructive force Constructive force	Failed state remnants Failed state subgroups Individuals

5

Doctrinal Foundation to Responses

- *Nature of Recipient Actor*
 - *Rational & Unitary Actor*
 - *State in realist tradition*
 - *Clausewitzian decision making*
 - *Predictive and familiar reaction*
- *Action — Reaction*
 - *Impose costs and risks -- jeopardize survival -- acquiesce to demands*

6

Challenge #1 and Solution #1

- State violating norm of sovereignty
- Solution found in Strategic Paralysis
- Warden
 - Strike centers of gravity-physical paralysis
- Boyd
 - Strike cognitive centers-OODA paralysis
- Leaders acquiesce-indiv/state survival

7

Challenge #2 and Solution #2

- State-sponsored or independent groups violating norm of sovereignty
- Solution found in counter-insurgency
 - Superimpose "state" characteristics on insurgent group
 - Bolster like-ideological state; act against insurgent group as a "state"
- Population rationally chooses ally

8

Challenge #3-Requires New Solution

- Disparate sub-state groups
 - Perpetrating grave injustices
 - Causing a state to fail and chaos to ensue
- Threat to International System
 - Rejection of Westphalian norms
 - Objective at odds with familiar motives
 - Injustice - humaninsurgency & chaos

9

Repudiates Doctrinal Foundations

- Sub-states have no clear political objectives to guide/limit conduct
- No articulated ideology for governing
- No clear, traditional centers of gravity
- Highly communal yet intermixed society
- Non-western decision making
- Action-Reaction??? A New Paradigm!!

10

Traditional Doctrine's Shortcomings

- Failure to shift paradigm from "rational-acting" state to failed state
 - Can't put sovereignty at risk when there is no government exerting it
 - No self-directing capacity thus no decision-making capacity
 - Not self-sustaining so no physical COGs
 - Non-Clausewitzian - no political discourse

11

Shortcomings Continued

- Strategic Paralysis unachievable
 - Underlying assumption of well organized, industrialized, traditional state absent
 - Must have a "system" to paralyze
 - Must know an unfamiliar "enemy"
 - Paralysis is N/A -- state doesn't exist
- Legitimacy in social identity vs. state
- Timelessness, fatigue, and impatience

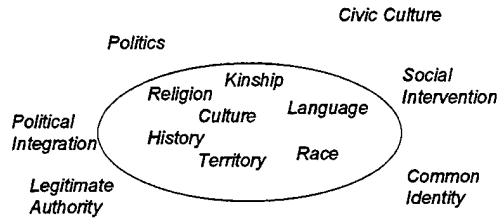
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Solution #3: A New Doctrinal Approach?

- *Understand the dynamics*
 - *US: reinvigorate state -- rejoin desired international system*
 - *Sub-state groups: fail state as means to dominate/eliminate other sub-state groups*
- *Solution found in understanding source of individual and group identity*

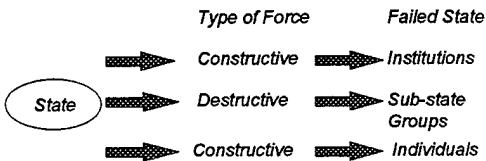
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Sources of Sub-State Identity



Core: Sub-state group identification
Outer Areas: Potential sources of integration, Assimilation, or Division

New Doctrinal Solution



Simultaneously apply force against each level in order to drive each group back into a reemergent state

15

Conclusion

- *Reemergent threats to international system*
- *US interests embedded in Westphalian and Justice-oriented system*
- *US will respond to threats to its interests*
- *New threats require new doctrine to guide the use of military force*
- *Layered, multi-force approach is one solution*

16

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Briefing
NATO ENLARGEMENT:
Issues and Answers

Cadet Jason Arnold
Col Samuel Grier

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NATO ENLARGEMENT: Issues and Answers

08 November 1996
Cadet Jason Arnold
Col Samuel Grier

OVERVIEW

- ♦ The Purpose
- ♦ The Enlargement Process
- ♦ After Enlargement

2

THE PURPOSE

Build an improved security architecture that provides increased stability and security for all nations in the Euro-Atlantic area, without recreating dividing lines.

CONTRIBUTIONS TO NEW MEMBERS

- ♦ Encourage democratic reforms
- ♦ Promote good neighborly relations
- ♦ Avoid a national approach to European defense
- ♦ Strengthen the Trans-Atlantic partnership

4

ENLARGEMENT PROCESS

- ♦ Russia
- ♦ Security Guarantees

5

RUSSIA

- ♦ Negative reaction to expansion
 - Historical anti-Russian orientation of NATO
 - Concern over creating a new East-West divide
- ♦ Enlargement will be unaffected
 - NATO adapting to expectations of Central Europe
 - Building a strong NATO-Russia relationship

6

SECURITY GUARANTEES

- ♦ Full membership essential for collective defense
- ♦ No upheaval of NATO's existing defense structures necessary

7

ENLARGEMENT PROCESS (cont.)

- ♦ Criteria for Admission
- ♦ The 'Who'
- ♦ Timing of Admission

8

CRITERIA FOR ADMISSION

- ♦ No official criteria beyond that outlined in Article X:
 - Case-by-Case basis
 - No single issue qualifies a nation for entry

9

CRITERIA FOR ADMISSION

- ♦ Expectations for new members:
 - Uphold individual liberty and the rule of law
 - Commit to objectives and undertakings of PfP
 - Commit to consensus-building
 - Contribute to defense of NATO members
 - Contribute to Alliance budgets
 - Exchange intelligence

10

THE 'WHO'

- ♦ Primarily a political decision
 - Poland, Hungary, and Czech Republic are likely test subjects
- ♦ Multiple waves of admission

11

TIMING OF ADMISSION

- ♦ Subject of debate
- ♦ April 1999, NATO's 50th Anniversary

12

ENLARGEMENT PROCESS (cont.)

- ♦ Subsequent waves
- ♦ Russian membership
- ♦ Eventual size of the Alliance

13

SUBSEQUENT WAVES

- ♦ Enlargement is an evolutionary process
- ♦ Must prevent first wave accessions from arbitrarily closing the door to later applicants

14

RUSSIAN MEMBERSHIP

- ♦ Unlikely for Russia to join the Alliance
 - Not a North Atlantic or European state
 - Too large to extend security guarantees
 - Internal Instability
 - Unlikely to compromise to reach consensus
 - Effectively grant Russian veto within NATO

15

EVENTUAL SIZE

- ♦ Avoid overexpansion
 - Limit to about 25 members
- ♦ Include 'hot spots' in the Alliance
- ♦ PFP membership as a viable alternative

16

ENLARGEMENT PROCESS (cont.)

- ♦ The NATO/EU/WEU Link
- ♦ Cost of enlargement

17

NATO/EU/WEU LINK

- ♦ Parallel enlargement process involving NATO and EU
 - Concurrent expansion invigorates stability
 - EU provides economic growth and political integration
 - EU reduces potential Russian backlash
 - Common membership in NATO and WEU

18

NATO/EU/WEU LINK (cont.)

- ✦ NATO must enlarge first to avoid 'backdoor' security commitments
 - Capitalizes on military orientation of new partners
 - Danger: Atlanticist view

19

COST

- ✦ Integration options
 - Full military integration
 - Interoperability
- ✦ NATO contributions
- ✦ New member contributions

20

AFTER ENLARGEMENT

- ✦ Internal Changes
- ✦ Consensus
- ✦ Command Structure
- ✦ Nuclear Posture

21

INTERNAL CHANGES

- ✦ NATO committee structure
- ✦ Political content of PfP
- ✦ NAC+ and political council-plus

22

CONSENSUS

- ✦ Consensus mechanisms
 - Only as strong as consensus of members
 - "Weighted consensus" rejected

23

COMMAND STRUCTURE

- ✦ Must be flexible enough to absorb new members without reinventing NATO command structure with each accession

24

NUCLEAR POSTURE

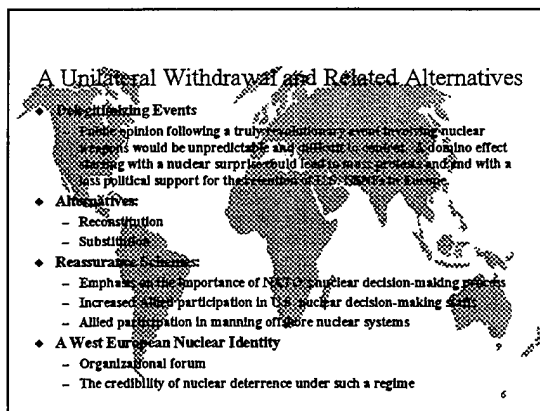
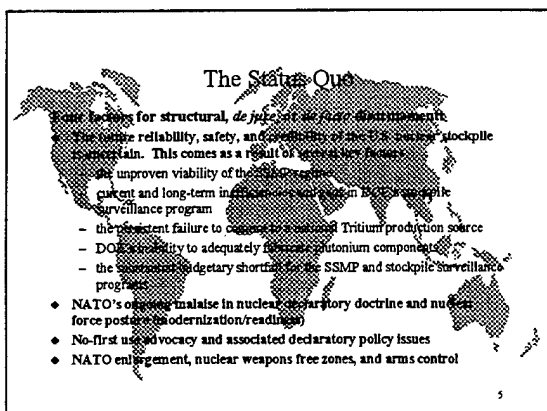
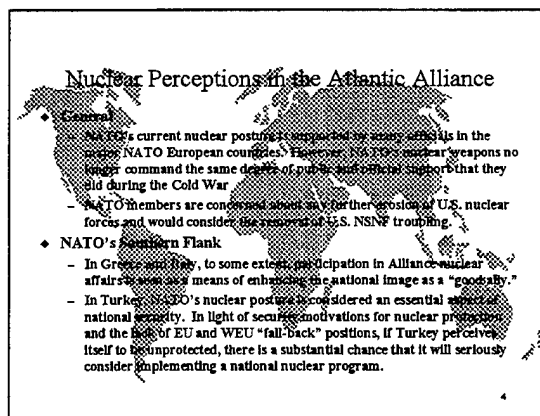
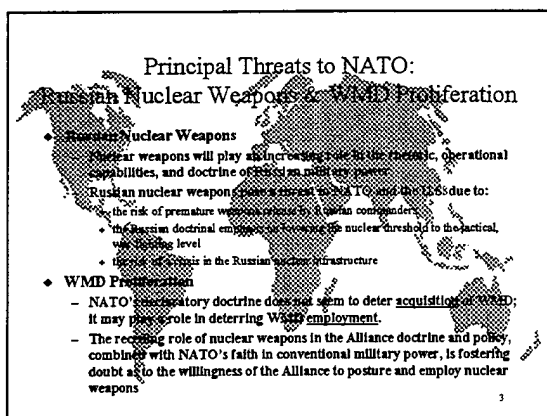
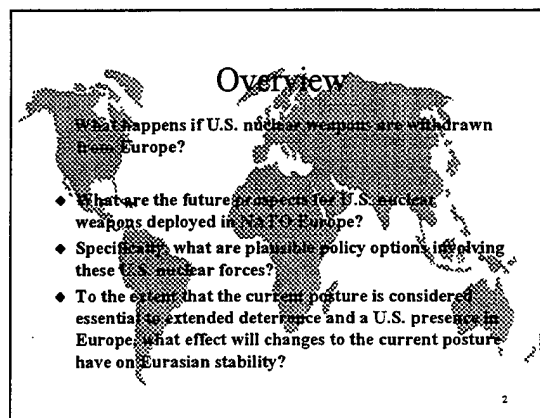
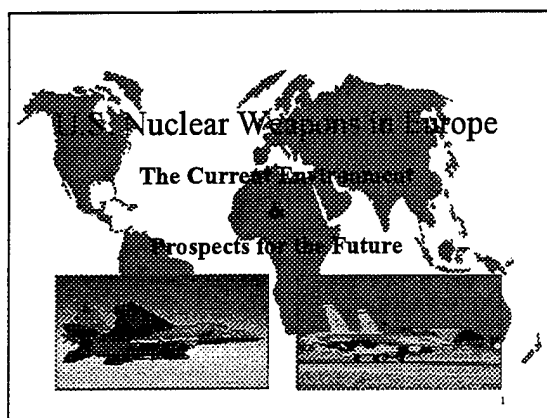
- ♦ Good will generated by forgoing the right to station nuclear forces in new member territory is of greater utility than any strategic gain
- ♦ NATO will not alter its nuclear stance

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Briefing
U.S. Nuclear Weapons in Europe
The Current Environment & Prospects for the Future

Capt Stephen P. Lambert
Capt David Miller

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An Air-Delivered Nuclear Forces (ANF) Regime

- Global limit of all air-delivered nuclear weapons
- Multi-staged process:

- Stage One - Initial Agreement
 - Declaration of full-scale disarmament
 - Declaration of no first use
 - Verification protocol
 - Symmetric reductions to agreed numbers
- Stage Two - Deep Reduction and Elimination Agreement
 - Further deep reductions to lower thresholds
 - Category Elimination
- Stage Three - Linkage to Further Warhead Destruction

- Traditional Western Arms Control Orientation
- Potential Obstacles
- Benefits from an ANF Regime
- The 1991 Russian Initiative

7

Conclusions

Most Europeans would say, "Yes, God, are they still there?"

British Defense Official, March 1996

- The nuclear calculus in the European security environment is changing, and NATO decision makers must prepare to meet these changes "Head-on"
- As the European security environment evolves, a withdrawal of the remaining U.S. nuclear weapons cannot be dismissed.
- Regardless of the future direction that policy makers choose, the alliance must define the future of its nuclear weapons posture based on its own security requirements, not on reactions to moves made by other actors seeking to capitalize on NATO's current aversion to addressing nuclear issues publicly.

8

Possible Delegitimizing Events

- Nuclear Accident
- Security Breach at a Weapons Facility
- Nuclear Use
- U.S. Government Action
- Safety and Reliability Problems

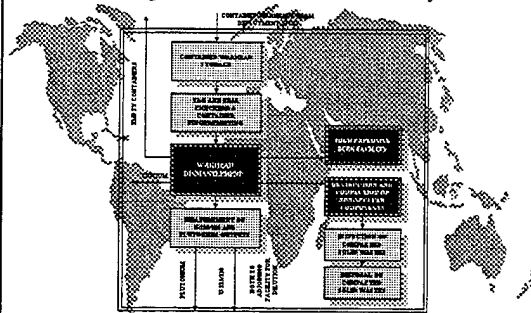
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The Parity/Credibility Paradox

- Functions familiar with current and past European nuclear issues interviewed by the authors expressed their view that a semblance of "strategic nuclear parity" exists between Russia and China.
- This view was advanced despite the fact that Russia with its 8500+ strategic nuclear weapons enjoys a nearly 30-fold advantage over China's strategic nuclear force of less than 300 weapons.
- The force available to a WNI (600 strategic and under 100 sub-strategic) would be significantly larger than that possessed by China.
- This suggests that a WNI might represent a significant concern for present or future Russian nuclear planners (i.e., barring a perfect strategic defense system, even 100 or 200 nuclear strikes represent an unacceptably high number to Russian planners)

10

Diagram of a Destruction Facility

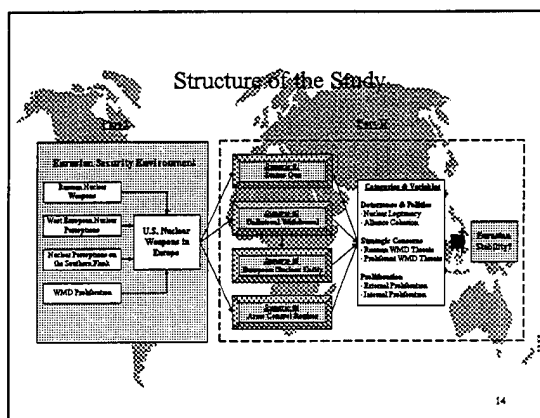
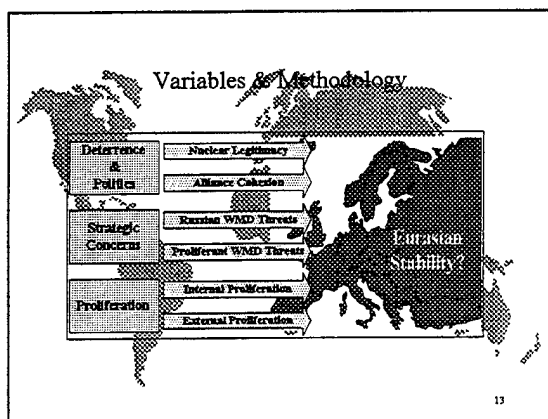


11

The Stockpile Stewardship Regime

- The Scientific Stockpile Management Program (SSMP)
 - "What we are essentially doing is working on aircraft in a hangar for 20 years. I can look at it, open a few panels, but never start the engine. After 20 years, we will fill it with gas and go for it. The idea of day, it worries us a lot." James Hansen, Director, National Security Council
- DOE's Stockpile Surveillance Program
 - Requires routine, random, and on-demand nuclear testing of the stockpile
 - "DOE is behind schedule on carrying out many of the stockpile tests. In some instances DOE is several years behind schedule. Only through testing can DOE identify problems or defects that would warrant changing the reliability level of a particular weapon. Being behind schedule in the testing provides DOE with less information on the weapons, thereby providing less confidence in the reliability levels of the weapons." July 1996 GAO Report

12



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Briefing
Three Reasons Why the US Still Needs NATO

Capt Steven R. Drago

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Three Reasons Why the US Still Needs NATO:

Promote Stability
Readiness & Deterrence
Crisis Response

1

What security structures do we need to
address the new security environment in
and around EUCOM's AOR?

--NATO (OSCE, EU, WEU, UN)
--start-up costs for alternative?
--->What can NATO do for the US?

2

US Objectives in EUCOM?

National Security Objectives
National Military Objectives
EUCOM Theater Objectives

3

National Security Strategy of Engagement & Enlargement

--Military Forces Ready to Fight
--Bolster US Economic Revitalization
--Promote Democracy Abroad

4

National Military Strategy

--Promote Stability
--Thwart Aggression

5

EUCOM's Strategy of Engagement & Preparedness

--Engagement in Peacetime
--Fight to Win
--Crisis Response

6

Strategic Concepts Translated:

- 1) Promote Stability
- 2) Readiness & Deterrence
- 3) Crisis Response

7

Promote Stability

- Threats:
- Eastern Europe
 - Western Europe
 - Nuclear Proliferation

8

Readiness & Deterrence

- Threats:
- Southern Flank
 - Eastern Flank

9

Crisis Response

- Operations:
- Kuwait, Iraq, Rwanda, Somalia,
 - Liberia, Former Yugoslavia
 - Nagorno-Karabakh

10

HOW DOES NATO ENABLE THE US TO ADDRESS THESE THREATS?

11

Promote Stability

- Eastern Europe
- Western Europe
- Nuclear Proliferation

12

Readiness & Deterrence

- Southern Flank
- Eastern Flank

13

Crisis Response

- Legitimacy
- Infrastructure
- Systems Integration/Interoperability

14

Recommendations:

- maximize influence
- minimize costs

15

Minimize Costs

- 1) Marginal Cost Sharing:
 - NATO Infrastructure
 - PfP
- 2) Perceived Commitment
- 3) Mixed public/private benefits

16

NATO

- Promote Stability
- Readiness & Deterrence
- Crisis Response

- Maintain Influence
- Minimize Costs

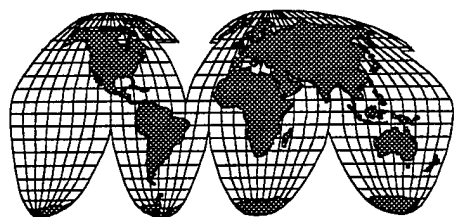
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Briefing
Regional Security (Asia)

Maj Alan Van Tassel

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REGIONAL SECURITY (ASIA)

1996 INSS RESEARCH RESULTS
CONFERENCE

1

A **RIDDLE** wrapped
inside a **mystery**
inside an **enigma**

2

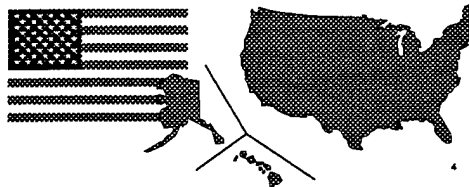
East Asia is a region of growing importance for U.S. security and prosperity; nowhere are the strands of our three-pronged strategy more intertwined, nor is the need for continued engagement more evident.

President Clinton
A National Security Strategy of Engagement and
Enlargement

3

U.S. NATIONAL SECURITY OBJECTIVES

- Enhancing our security
- Promoting prosperity at home
- Promoting democracy abroad



4

ENHANCING OUR SECURITY

- The United States is a Pacific nation.
- It has fought three wars there this century.
- Nearly 100,000 U.S. forces are stationed in the region.
- Five of the United States' seven mutual defense treaties are with Asia Pacific countries.

5

PROMOTING PROSPERITY AT HOME

- U.S. economic and security interests are inseparable.
- Asia Pacific is the fastest growing economic region of the world.
- A prosperous and open Asia is central to the economic health of the United States.

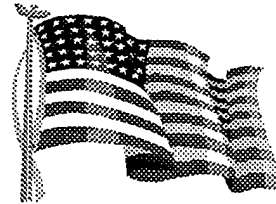
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PROMOTING DEMOCRACY ABROAD

- Economic development improves the prospects for democratic development.
- Democracies are less likely to go to war with one another.
- American economic and security interests are served by enlarging the community of free-market democracies.

7

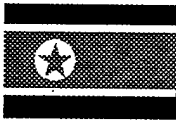
U.S. SECURITY CONCERNS IN EAST ASIA



8

NORTH KOREA

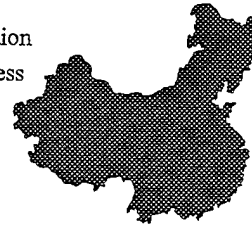
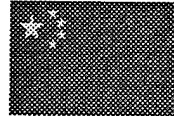
- Regime instability
- WMD and ballistic missiles
- Reunification with South Korea



9

CHINA

- Regime instability
- Military modernization
- Growing assertiveness



10

JAPAN

- Regime instability
- Access to markets
- Growing assertiveness



11

GENERAL TRENDS

- Enormous economic growth
- Near-term focus inward
- Longer-term focus outward
- Potential for conflict and cooperation

12

POTENTIAL FOR CONFLICT

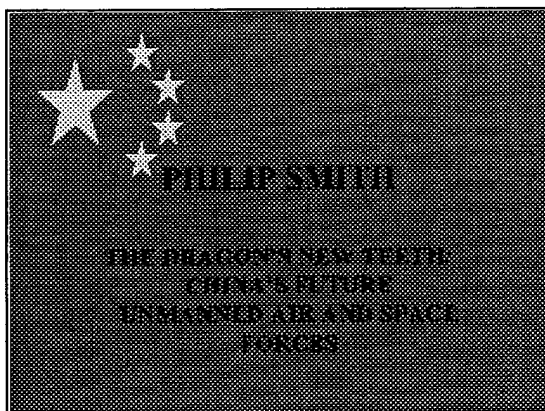
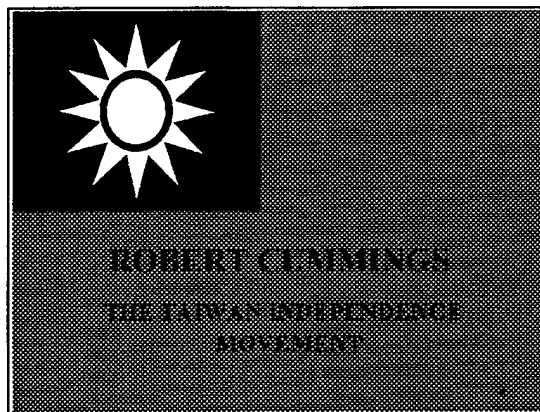
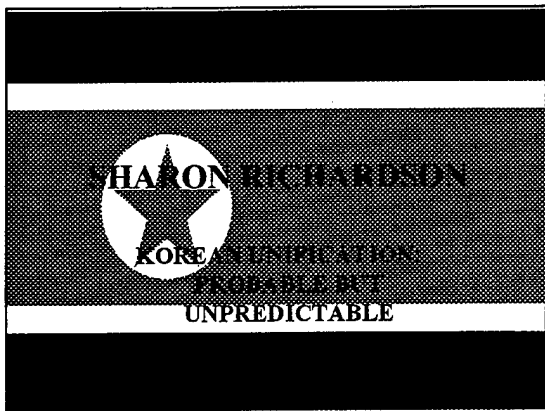
- Competition for raw materials, markets, and influence
- Historical animosities and conflicting territorial claims
- Possible flash points include:
 - The Korean Peninsula
 - Taiwan
 - The Spratly Islands

13

POTENTIAL FOR COOPERATION

- Greater regional integration
- More and stronger democracies
- U.S. ability and will

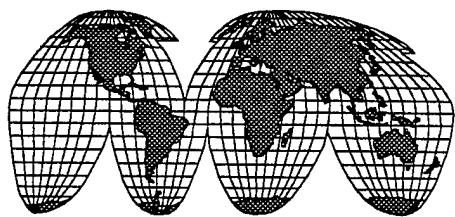
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MELVIN RICHMOND

UNITED STATES NATIONAL
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Briefing
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LTC Melvin E. Richmond, Jr.